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Advertisements, Subscriptions, Orders for Copies, and all communications to be addressed to "THE PUBLISHER."

REMITTANCES to be made payable to *E. Heard Halse*; and POST-OFFICE ORDERS payable at Cannon Street Post Office, but to be addressed to "THE PUBLISHER."

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All Advertisements intended for insertion in the current Month must be sent to **THE PUBLISHER** on or before the 12th, except Employers' and Assistants' Advertisements, which can be received up to 10 a.m. on the morning previous to publication.

OUR COUNTRY AND COLONIAL SUBSCRIBERS are requested to furnish the Editor with any trade gossip that they may consider interesting.

Subscribers are requested to observe that, for the future, the receipt of **THE CHEMIST AND DRUGGIST** in a *Green Wrapper* indicates that with that number the term of subscription has expired, and that no further numbers will be sent until the same has been renewed. We issue the notice very respectfully, not that we distrust our Subscribers, but simply because we find it impossible to keep an immense subscription list like that we now have, extending to almost every town in the world, in order without an exact system like this.

Editorial Notes.

REAPING THE WHIRLWIND.

THE late members of the United Society, who were present at the Annual Meeting of the Pharmaceutical Society, must have been gratified to see how thoroughly it surpassed, in confusion and uproar, that famous gathering of "outsiders" at the London Coffee House, where the first decisive steps were taken to initiate a good understanding between themselves and the austere members of the Pharmaceutical Council, as a basis for legislation.

That co-operative associations are especially prejudicial to the intelligent London druggist we know and admit; that the late President was the wrong man in the wrong place we do not deny; but that five valuable hours should be consumed in wrangling over a subject which could only defile all who touched it, is not creditable to the unity, paternity, and equality of the newly leavened Pharmaceutical body. We say five hours, because, though the business part of there port was glanced at and the poison regulations bandied about, they were not discussed fairly, for the simple reason that the demonstrative party saw nothing but a gloomy panorama in which the President of a Great Society was weighing out drugs to Dives while starving chemists and druggists were standing in a line ready to take their turn in holding the scales.

Doubtless the angry feeling of the London members was embittered when on the morning of the meeting they ascertained that the very man they wished to keep out of the Council had been, in all probability, already returned by the provincial voters. The result shows this was the case for Messrs. EVANS, HASELDEN, and CORNELIUS HANBURY (who, by the way, is not DANIEL HANBURY, F.R.S., but his cousin and partner), were the only London candidates elected, the first-named being sixth on the list, whilst Mr. WILLIAMS, the most active and the only thoroughly

independent and progressive candidate who was member of the last Council, was rejected. Mr. WILLIAMS did more solid, useful work during the short time he held office than many of the country Councillors have done during the last ten years.

We speak in these terms in no disrespect to the new Council, which is composed of excellent material if it be judiciously moulded, but to point out unmistakeably to our provincial friends for what a serious mistake we think they are responsible, one which is a lasting disgrace to the provincial constituency, and can only be atoned for by returning Mr. WILLIAMS high up on the poll at the next election.

In the report itself there is nothing unsatisfactory; it represents a more than average year's work. Anent the poison regulations nothing new was elicited. The members did not like them, and considered themselves sufficiently well represented in Parliament to prevent the imposition of any others, forgetting that when the Pharmacy Act was passing through the House of Commons, the Council, with a zealous band of local secretaries at its back, was unable to prevent the insertion therein by the Privy Council of the words which impose the duty of making regulations on the Society. Of the possibility of *practically* working them we cannot presume to speak; but it seems to us, as journalists, that the adoption by the trade of some system would effectually silence the public press, ever ready in cases of accident to cry out against the poor druggist. This subject is fully discussed in an independent article given on another page. The proposed code was referred back to the Council to be annihilated, modified, or presented *de novo* for the consideration of the next annual gathering.

Of Mr. DICKINSON's conduct at the meeting and scrutiny it is impossible to speak in measured language. Let us be consoled by the reflection that he has *retired* from the Society to relieve the Council of the unpleasant task of expelling him. *Sic transit gloria mundi.*

WE have much pleasure in announcing that Mr. G. F. SCHACHT, of Clifton, in compliance with the request of the Council of the Pharmaceutical Society, has consented to deliver the annual address to the students at the opening of the session in October next.

At the last meeting of Council Mr. G. W. SANDFORD was elected President, Mr. A. F. HASELDEN Vice-President, and Mr. F. H. HILLS Treasurer, of the Pharmaceutical Society.

FROM the *Athenæum* and other journals we learn that the Council is prepared to receive applications from gentlemen competent to undertake the duties of Editor and Sub-Editor, respectively, of the *Pharmaceutical Journal*, to be published weekly on and after July 2nd. The salary of the Editor is fixed at £250 per annum, that of the Sub-Editor at £150 per annum. The 18th inst. is the last day on which applications will be received by the Secretary, 17, Bloomsbury Square.

OFFICIAL notice has been given that *two* annuitants on the Benevolent Fund of the Pharmaceutical Society, will be elected in October next.

THE following gentlemen have been elected Corresponding Members of the Philadelphia College of Pharmacy:—Professor JOHN ATTFIELD, London; HENRY B. BRADY, Newcastle-on-Tyne; JOHN ABRAHAM, Liverpool; T. B. GROVES, Weymouth; CHARLES TICHBORNE, Dublin; F. CRACE CALVERT, Manchester; JOHN MACKAY, Edinburgh; W. W. STODDART,

Bristol; J. C. BROUGH, London. Professor ATTFIELD has also been elected Corresponding Member of the Society of Pharmacy of Paris.

WE have the pleasure to announce that we have recently concluded arrangements with Messrs. REDINGTON, HOSTETTEN, and Co., of San Francisco, to become our agents for California, Oregon, Nevada, etc. Under their superintendence we shall, next month, commence a large circulation in those far western states. In the United States, Canada, Australia, and India, we have, during the past six months, extended the circulation of our paper very largely; and though, of necessity, our attention is chiefly confined to matters connected with the trade at home, we can assure our foreign readers that we always take the liveliest interest in the advancement and prosperity of pharmacy abroad, and always receive with pleasure the items of information which many of them are kind enough to send us.

IN view of the present agitation respecting the dispensing and storage of poisons, and considering that it will be well during the next twelve months that all the latent wisdom of the trade should be brought to bear on the discussion, the proprietors of this journal have decided to offer a prize for the best design which shall be sent them in the course of the next two months for a dispensing counter. Next month we shall announce definitely the prize that will be given, and we hope, also, to be in a position to mention the names of one or two eminent chemists and druggists who will favour us with their judgment on the designs sent to us. In the meantime, if any intending competitors wish for further information, we shall be glad to hear from them, and in our next will endeavour to reply to all. The competition is open to everyone, and we hope that both chemists and professional shop-fitters will manifest an interest in this novel feature of our journal. We shall lithograph the successful design and publish it in the same style as our portraits, so that, as our readers will perceive, the winner will, besides gaining the prize, become the possessor of a valuable piece of property, by simply registering the design. The drawings must be on a scale suited for the size we have indicated, and in each case should be accompanied with a written description as concise and clear as possible. It is requested that a distinctive motto be attached to each design, and the same motto repeated in a separate envelope which shall contain also the real name and address of the competitor.

WE call especial attention to the announcement recently made by Mr. Sandford, respecting the labelling of Paregoric and other medicines, even less dangerous, with the word *Poison*. It is highly desirable that the whole trade should follow the example of the President of the Pharmaceutical Society. Mr. Flux believes this course to be perfectly legal, and at least it is the only course compatible with common sense and future safety.

MANCHESTER is jubilant. Not for the first time in our rough island story has she matched herself against all England, and taught her opponents tactics, through victory. Boldly she asserted her claim to be represented on the Council, and asked for two seats. Energetically and cleverly the members were canvassed, and the result was, that, much to the surprise of the Conservative gentlemen who raised their hands in horror at this unpharmaceutical proceeding, and foretold the defeat of both candidates, the two came in at the head of the poll. The two gentlemen

thus elected are eminently fitted for the position; but though their personal popularity had much to do with it, it seems to us that the success of the Manchester committee should be regarded less as a proof of the victory of the principles advocated in their circular than as a triumph of activity over apathy.

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It is distinctly the duty of the Pharmaceutical Society to provide for this branch of education.

JOSEPH INCE.

THE POISON QUESTION.

PERHAPS no meeting, however thoughtful, quiet, and logical, could have reached a more satisfactory point, with respect to the regulations for the dispensing and sale of poisons, than was attained through the noisy and unreasoning excitement of the meeting on the 18th of May last. The question is adjourned for twelve months, in the course of which time it may be hoped the matter will be looked at in the most catholic spirit; and when next the Council of the Pharmaceutical Society meets the members to discuss this question, there shall be found—if not unanimity—an evidence of a comprehension of the arguments on the other side, and a desire on the part of all to advance the general interests, not of the trade merely, but of the community at large.

The Council, feeling that they were bound by the wording of the preamble of the Pharmacy Act to institute some arbitrary regulations which should compel some amount of care to be taken wherever and whenever poisons were dealt in or dispensed, over and above the ordinary requirements of the Act, drew up the following as a series of rules which should secure safety as far as it could be done by means of contrivances and arrangements, at the same time interfering as slightly as possible with the convenience of those who had little or much to do in the way of supplying these poisons to the public:—

By virtue and in exercise of all powers and authorities in this behalf, the Pharmaceutical Society of Great Britain do hereby resolve and prescribe that from and after the day _____, the following shall, within the meaning of the Pharmacy Act, 1868, be regulations as to the keeping, dispensing, and selling of poisons, *videlicet* :—

1. In the keeping of poisons, each poison shall be kept in a box, bottle, vessel, or package, distinctly labelled with the name of the article and the word *Poison*.

2. In the keeping of Poisons, one or more of the following systems shall be used :—

I. The boxes, bottles, vessels, or packages, containing poison shall be kept apart from other boxes, bottles, vessels, or packages, and shall be so kept in an apartment, cupboard, compartment, or drawer, set apart for dangerous articles.

Or if not so kept apart.

II. The bottles or vessels used in any shop or dispensary to contain poison shall be distinguishable to the touch, as by being angular, fluted, or corrugated, and shall be unlike the bottles or vessels used to contain articles which are not poisonous or dangerous, in the same shop or dispensary.

Or otherwise.

III. The bottles or vessels used in any shop or dispensary to contain poison shall be tied over, capped, or secured in a manner distinguishable from the way in which any bottles or vessels not used to contain poisons or dangerous articles used in the same shop or dispensary may be tied over, capped, or secured.

3. In dispensing and selling poisons, all liniments, embrocations, and lotions containing them shall be sent out or supplied in distinctive bottles, or bottles made distinctive; and labels, containing some word or words of caution, showing that the contents are not intended to be taken, in addition to the name of the compound or instructions for use, shall be affixed thereto.

The chief business of the annual meeting of the Society was to discuss whether or not these regulations should be offered to Parliament to become a law binding on all who are registered chemists and druggists—in other words, on all who sell poisons. In the provinces, especially, great and almost universal opposition to such a course has been expressed. Manchester, Leeds, Hull, Nottingham, Sheffield, and other influential towns where the question has been discussed at all, have been almost unanimous in condemning the suggested new Bill, while the fact that at least the first three gentlemen on the election list for the new Council have been conspicuous for their energetic opposition, shows how generally objections are entertained. London chemists have been writhing behind their country brethren in the violence of their antipathy to any further legal interference, if we may judge by the speeches of many of them at the late meeting, while even in the Council itself opinion was divided. Under these circumstances, it is not without some diffidence that we confess to a belief that the unpopular side is right, and we hope and have confidence that before next year the trade generally will have come round to the same opinion. The unanimity in the towns we have named occurred simply for the reason that the other views were not advocated, or if they were, it was with but little spirit, and almost with indifference. Doubtless it will be a little trouble to some members of the trade to carry out any regulations whatsoever; but chemists should carefully avoid bringing this forward as an argument against their adoption. The Pharmacy Act was eagerly sought for by the trade, and however much individuals may complain that it has not answered their expectations, it is beyond dispute that it has conferred substantial advantages, immediate and prospective, on all who have been by it recognised by law. But the privileges thus bestowed were not expressly intended to benefit one class so much as the nation; that we as chemists have an advantage is an incidental, but at the same time an accidental result. In effect the public said something like this :—“We are not quite satisfied with the way in which our medicines are dispensed. Every now and then one of us gets a dose which proves to be our last. Sometimes the error seems to lie with ourselves, sometimes it is on the part of the druggist, sometimes it betrays

ignorance, sometimes carelessness; but at any rate the result is the same. We do not know much about dispensing ourselves, but we do think that something might be done to reduce the number of these deplorable accidents, if not to avoid them altogether. Let us, therefore, draw up some sort of Bill which shall compel these dealers in poisons to manifest more care when they are handling such things.”

At this point the Pharmaceutical Society steps in and says, “You, not being druggists, are not competent to frame a Poison Bill which shall be practicable. Will you leave it to us, and give us power, and we will guarantee you that everything shall be done that can be done?”

The antecedents and references of this Society were good, so the Government said, “Very well; you shall have a fair trial. Your trade shall be protected, and we will see whether you can protect the public.”

Now, with this little history before us, we ask whether the Council was not justified on grounds of self-interest, as well as bound by considerations of honour, to bring forward some such regulations as those which have caused so much dispute? It is not the regulations themselves which are under discussion: it is a question of any or none. No one knows for certain that if we decline to legislate for ourselves, the Government will undertake the duty for us; this is hinted, and is at least possible. But most assuredly if we refuse from motives of false pride, or worse still, from wretchedly economical ideas to make some little arrangements general, be it only to give satisfaction to the public, we shall be most bitterly assailed by the press the next time a case of accidental poisoning happens to come prominently before the public, and very likely the House of Commons will make very short work indeed of our whims, objections, or fancies. This is how the matter strikes us from our own point of view, but it is a very much stronger case if we look at it from the position of our customers. To use the forcible illustration given by Mr. EDWARDS: it may be a rare case, but it is not by any means an impossible one. “A mother stands by the side of her dead child, poisoned by accident in its medicine. Will that mother be satisfied to be told that more precautions might have been taken, but that the druggists objected to these because they did not like to be interfered with in their businesses? Will any argument convince her that anything, even the principles of Anglo-Saxon liberty, can be more precious or more sacred than the life of even one little one?” Surely, if for no other reason the chemists of England might submit to this very slight hardship, for the sake of showing that they above all others feel the responsibility of their duties, and have no rights which they will for a moment place between their business and the lives trusted to them. There is just one argument used by the opponents of the regulations which hardly needs more than to state it to expose its fallacy. They say they do not need such a law because they already practise all its requirements. They admit the importance of such arrangements, and perceive how excellent a plan it would be if they were adopted all through the country; but these gentlemen do not want to have a policeman coming in at any hour of the day to examine their dispensing arrangements. In some towns this policeman argument has been made a complete bugbear. Presuming that any sense would be used in drawing up the Act, if passed, it may at least be expected that some one would be appointed to see it carried out who could show competence for the duty, and such a one need not frighten any chemist.

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any further action can be taken. Next year we hope to see a different spirit manifested, and in the meanwhile let us think over and discuss the question calmly and fairly, and if it does seem desirable to have any regulations at all, let us try to make them as perfect and simple as possible.

The *Pall Mall Gazette*, of May 27th, thus refers to the same subject:—

"A very lively discussion is in course upon a subject of near interest to many of us, but under circumstances which make it difficult for those most concerned to express any definite opinion, or to exert any direct influence. The lamentable frequency of mistakes in dispensing, of errors in taking medicines of a poisonous character, in swallowing liniments for draughts, and "drops" instead of mixtures, is only too apparent to newspaper readers. These disasters arise from causes of which some are probably beyond reach of regulation—from haste, carelessness, and stupidity. To remove some of the probabilities of error from ignorance on the part of the dispenser the Legislature agreed last year to invest the Pharmaceutical Society with exclusive powers of examination and registration, and to prohibit any one in future from dispensing and retailing drugs until he should comply with the educational requirements and pass the examination of this Society. It gave to the Pharmaceutical corporation a very important monopoly. The main and ostensible reason for this was to regulate the sale of poisons, and to diminish the existing risks of accidental poisoning by dispensed drugs. Powers were at the same time given to the Society to make such regulations in addition to those contained in the Act as seemed likely to conduce to the public security, and, when approved by the Government, such rules would have the force of law. The Council of the Society have rightly understood that this permissive direction was to be interpreted as involving the responsibility of action. They have drawn up regulations for precautions in storing and dispensing medicines, involving certain simple mechanical details and arrangements. We shall not enter upon these more minutely now than to say that they are such as have been effectually carried out for some time in many establishments of the best class. A great deal of opposition has been stirred up against these proposals, and the meeting at which they were discussed last week exhibited something of stormy selfishness. The matter is about to be reconsidered, and we exhort the pharmacutists, for their own sakes, and for ours, to display a more liberal and enlightened consideration of their public duties."

The following are the comments of the *Lancet*, June 11th, 1870:—The members of the Pharmaceutical Society, at their recent annual meeting, declined, after a sharp debate, to adopt the recommendations of the Council for the keeping and storage of poisons. The revision of the rules was pressed forward by the Privy Council, and it is much to be regretted that the Society thought proper to do its best to shelve the matter, under cover of a resolution to refer the matter to the new Council of the Society. The Council proposed to the meeting, after mature consideration, that certain alternative plans should be adopted; either poisons should be kept in a separate place, or in special vessels or bottles, or in vessels closed in a peculiar manner, so as to arrest the attention of the dispenser. So that considerable latitude would be given to chemists as to the mode in which poisons should be kept. In reviewing the objections urged at the meeting, we fail to note any but selfish considerations advanced, though there were two or three gentlemen who begged the Society to remember that they owed a certain duty in the matter to the public. One speaker observed that "every one had his own peculiar means of providing against accident," and that they "ought not to pay servile obedience to an Act of Parliament;" another actually admitted that the proposed regulations involved "rather more trouble than they chose to take." So that the result of the granting of a new Pharmacy Act, and through it of special and peculiar privileges to pharmacutists, has been rather to increase their inclination to disregard public interests, and to prompt every man to do what is right in his own eyes.

We trust the new Council will not be deterred by the temper of the recent annual meeting of the Pharmaceutical Society, from taking means to secure greater immunity from accidents which are due to the careless way in which poisons are kept by chemists.

The meeting, at its fag-end, became a regular bear-garden, in consequence of an unseemly and direct personal attack made on the President for supplying, as was stated, drugs to co-operative stores. The President left the chair, when a resolution was proposed requesting him to retire from the Society. This was regarded as incapable of being put to the meeting, and was withdrawn on the representation of the solicitor to the Society, who intimated that, if carried, it might be libellous. To make matters worse, one of the scrutineers falsified the votes for the new councillors. We expected better things from the Pharmaceutical Society.

DOCTOR AND DRUGGIST.*

PHARMACY has truly been termed the hand-maiden of medicine. The relations of the two professions are of the closest and most intimate character; each has the same end in view, and without one the other could not exist. But though mutually dependent, the physician and pharmacist pursue different yet parallel paths; the calling of each is clearly marked out and well defined, and the shortest way to success in either is to "keep the road." There was a time in earlier, and we might say barbarous days, when the two vocations were vested in the same individual, but in that age medicine and pharmacy made but little progress. The terms ignorance, superstition, and quackery best describe the period when the calcination of a toad was the ultimatum of pharmaceutic art, and the administration of its ashes one of the highest achievements of therapeutic skill. We do not mean to say that this miserable state of things was to be attributed solely to the fact of the dispensing of medicines being in the hands of the physician, but we think, nevertheless, that it had a retarding influence, and this is the more plausible when we consider that it was not until the severance of the two callings that pharmaceutical science could be said to exist.

There are times and circumstances when the physician may be perfectly justifiable in exercising this double vocation. In regions where the services of a pharmacist cannot readily be procured, and where drug stores are inaccessible, the doctor is compelled to dispense his own medicines. In a new country like our own (Canada) this state of things frequently exists, but if a druggist is at hand we hold that to him alone belongs the right of preparing medicines. We know that there are very many incompetent and careless druggists; but, as far as our own observation goes, the dispensing physician is, as a rule, the worst of the lot. It sometimes happens that doctors of this class pay more attention to their drugs than to their patients—this is generally the case when drugs pay best—but it will nearly always be found that one or the other suffers. The profession of medicine, or rather the practice of it, demands all the skill, and the utmost concentration of effort which any single individual can bestow upon it. The qualified pharmacist can relieve the physician of much responsibility and no inconsiderable share of labour by performing the part which legitimately belongs to him, and we know that in doing so he will have ample scope for his energies also. The testing of drugs, the estimation of their strength, the detection of adulteration, the manufacture and preparation of the various compounds, and the dispensing of medicine, are quite sufficient to engross the whole attention of one man.

But in order to perform satisfactorily these multifarious duties, a thorough qualification is necessary, and this can only be attained by preparatory training. If the confidence of the medical profession and the public is to be gained, it

* From the *Canadian Pharmaceutical Journal* for May.

can only come through the channel of education. On this point we cannot do better than quote a few paragraphs from the *Michigan University Medical Journal*. In alluding to the subject of pharmaceutical education in the United States a writer says:—

But a very small proportion of our druggists have had facilities of college education in pharmacy. Without more exceptions than rules admit, they have received only the industrial opportunities of the drug-shop, and the tuition of its untaught masters, towards scientific preparation for life-work. No profession furnishes occasion for more "self-made men;" perhaps no other scientific profession includes a larger number of such; young men, who, from chance books, with poor advice and fragmentary tuition, have made their own paths through to the highways of science, where they are now marching among scholars, and leading in research.

Difficulties may strengthen individuals, but it has not been shown that educational deprivation serves to cultivate classes of men. Suppose we had no medical colleges. Here and there a "learned blacksmith" would raise himself, with an acquired wealth of medical science. But those who have attempted the study of medicine in the preceptor's office, and have there tried the efficiency of instruction imparted by doctors full of business and rusty in learning; and then have found what lectures, and demonstrations, and cabinets, and social excitement can do to stimulate the learner, elucidate the subject, and make thorough the philosophy from experience, may judge of the possibility of a *scientific profession educated without colleges*. It is no personal discredit to earnest young men, who have served three or five years and become first clerks in our best drug stores, that, when with worthy purpose they leave business and enter upon a college course of pharmaceutical chemistry, they are most often found deficient or destitute in the alphabet of the science before them. A very small proportion of American pharmacists have been instructed in the colleges of pharmacy which are established in our larger cities, and which are the only distinctive schools of pharmaceutical science in our country.

It is not alone because adulterations and dilutions abound in the drug trade, that the pharmacist (for the most restrictive exercise of his duties) should invariably be an analytical chemist. No other training can equal that of chemical analysis, especially quantitative analysis, in giving that discipline of habitual accuracy and care, needed to make the pharmacist a safe dependence for the physician. There may be difference of opinion as to whether the first years in the shop preferably come before or after college instruction. Certainly the youth already schooled in science, disciplined in accuracy, informed of the materia medica and practised in its preparations, will profit more richly by experience, will cause his employer less annoyance, and will serve the public more securely during briefer probation, than can be if untaught.

While people and profession lament the imperfection of our technical and professional college systems of education, the fact has been overlooked that pharmacy is practically destitute of any college education. When the time comes that over fifty per cent. of the American pharmacists graduate at institutions which shall require years of study and training, and employ the entire time and energy of students, then we shall doubtless hear more criticism upon the quality of pharmaceutical education than we do at present. But we should not await the arrival of that period before we begin to consider to what extent studies of botany, physiology, and mineralogy, of liberal general culture, and of modern languages, ought to be required for university graduation in pharmacy.

In the German universities pharmacy is as much of an organised and provided course as is medicine; France has her thoroughly established schools of pharmacy; and Britain has numerous laboratories of pharmaceutical chemistry. In America, the young pharmacist who is self-impelled to qualify himself for his vocation, has been obliged to gather instruction at colleges devoted to other purposes, and to adapt the fragments to frame his own education. At the third International Pharmaceutical Congress, held in Bavaria last September, and in which our nation was represented, it was unanimously resolved that "high schools of pharmacy, as an integral part of the universities, with graduated pharmacists as professors, are essential to the interest of the public and the profession."

Pharmacy is a pursuit which must be scientific, not only for the safety of medicine and society, but for its own relief. Years of practice may give facility in dispensing, dexterity in wrapping, and tact in sale; qualities having a positive value in the labour market; but they do not relieve the vocation from the drudgery of trade and the humiliation of ignorance. It is pitiful that a man with the name of pharmacist should plod through life ignorant of the material in his hands and the changes under his eye, deaf to the chemical language by which all matter is defined, and blind to the scientific movements stirring the world.

LIME JUICE.

A SUPERIOR quality of lime juice has been lately imported into this country by Messrs. Evans, Lescher, and Evans, which is prepared on the plantation of Sturge's Montserrat Company. This juice seems to keep clear and bright without any addition of spirit or any chemical agent, and it is of very excellent flavour. We have learned the following interesting particulars of the island of Montserrat and of the cultivation of the lime tree there from the consignees:—

The late Dr. John Davy, F.R.S., brother of Sir Humphrey Davy, writing of this island says: "Montserrat, the name given by its discoverer, Columbus, is truly a mountainous island. No island in these seas is bolder in its general aspect, more picturesque, and I think I may add, without exaggeration, more beautiful in the detail of its scenery; indeed, we might be tempted to say, considering its fortunes, that it has the fatal gift of beauty."

Its extreme length is less than eleven miles, its breadth from four to six miles. From the character it has borne for the healthiness of its climate, it has been styled the Montpelier of the West Indies. It was first colonised by English and Irish settlers in the year 1632. Its charter, one of the oldest in the history of English colonies, created an upper and lower house of Parliament, with a governor representing the Crown. For the first century after its settlement its population consisted for the most part of settlers from the British Isles, owning or cultivating the very small estates into which the island was divided. This healthy industry and comparatively healthy social condition, however, rapidly succumbed to the large importation of slaves during the latter half of the last century, reducing the white population to something like extinction, their numbers being at the present time about 150 white to 8,000 black people. It can be no matter for surprise that under these altered conditions the British Legislature in miniature should have become a cumbrous burlesque, and should have been lately changed for a simple administrative form of government.

As, in several of the neighbouring islands, there lies embosomed in the Mauritius the crater of a volcano, which has remained for ages in a kind of slumbering activity. In the midst of the wooded steeps around it—green, till blasted by the sulphurous vapours at its edge—there extends an area of a few acres of sulphur still forming and depositing. A perennial stream of boiling water issues from the cracks beneath, diffusing a smell of sulphuretted hydrogen; and, but for the tropical verdure and beauty all around, the visitor would fancy himself among the chemical works on the banks of the Tyne.

The lime tree, a native of Western Africa, seems early to have found a congenial *habitat* in Montserrat. In the autobiography of a negro, who obtained his freedom about the year 1750, he mentions his first profitable adventure, as consisting in trading in this fruit to the neighbouring islands. The tree, however, has never been made an object of extended and systematic cultivation till within the last twenty years. Its form is that of a large Lauristina bush, spreading in some instances over the ground for twenty to thirty feet; its foliage is like that of the myrtle, but with leaves of brighter green. It is armed with sharp thorns, making it often difficult to gather the fruit from the interior of the tree. The blossom is smaller than that of the orange, with a powerful fragrance. The crop is principally gathered in the months commencing with July, and ending with February, the trees often displaying at the same time the blossom and the ripe limes, with the green fruit in all its intermediate stages of growth.

The plantations, ranging along the shore for about two miles, extending in one direction to about 1,500 feet up the mountain steeps, with space between the trees to admit of the pasturage of cattle among them.

During the season of crop, the fields are traversed by a large company of young negroes, with a woman superintending them, who gather the ripe fruit into wide open baskets. When these are all filled, they are taken direct to the presses at the boiling houses, and the large company of "little people," as they are termed, proceeding with quick step in long Indian file, with the bright yellow fruit on their heads contrasting with their dusky figures, now lost among the lime trees, now emerging into the open path, presents to the stranger a curious and novel spectacle unique in its kind.

So the fruit, on its reaching the works, is passed through a machine driven by the mountain stream, which cuts it into slices, when it is transferred to the presses for the expression of the juice, which is then evaporated to about the consistency of honey for the manufacture of citric acid.

When, however, it has to be shipped as fresh juice, the fruit is first carefully sorted, and the unripe or over-ripe limes rejected, and when transferred to the presses, only about two-thirds of the juice is pressed out for this purpose; it being found that the last portion resulting from extreme pressure is of diminished strength and quality. This purer juice, being run from the presses at once into casks, is immediately secured from the air, so as not to be opened till its arrival in England.

The lime tree requires a period of from seven to ten years from the time it is planted before it makes any considerable return in fruit.

Montserrat, like the adjoining islands, is occasionally visited by earthquakes. In that of 1843, occurring in dry weather, the large quantity of rocks and boulders detached from the mountain summits enveloped them in such an atmosphere of dust, that the captain of the inter-colonial mail steamer, passing at the time, reported that the island had, in the convulsion, sunk under the ocean.

SNAKE POISON AND ITS ANTIDOTE.

THE following communication appears in a recent issue of the *European Mail*, and throws an important new light on the therapeutics of animal poisons:—

SIR,—Having noticed of late the publication in both European and American journals of articles upon the subject, and particularly one under date March 2, 1870, under the heading, "The Cobra Question in India," I trust you will give publicity to this communication, on account of its importance; and am induced to ask for it a place in the columns of your journal, in the hope that it will afford to your readers, in India more particularly, a knowledge of an antidote for snake poisons, which may claim to be specific, inasmuch as it has never been known to fail in a single instance during the past three years in different districts in this country, in which I have been able to induce its general adoption, and particularly by the *curanderos*, or curers (snake charmers). I have devoted no little time during the past twenty years to a study of the habits, peculiarities, &c., of poisonous snakes, and have made many experiments with their poisons, with a view to discover, if possible, specific antidotes to them, and have been so far successful as to be able to announce the law in therapeutics that "all animal poisons have their specific antidotes in the gall of the animal or reptile in which these poisons exist."

The bite of the *cobra*, or of any other poisonous snake or reptile, can be cured by administering a few drops of a preparation of the gall of the *cobra*, which should be prepared as follows:—Pure spirits of wine, or 95 per cent. alcohol, or the best high wines that can be procured, 200 drops; of the pure gall, 20 drops; in a clean two-ounce phial, corked with a new cork; give the phial 150 or 200 shakes, so that the gall may be thoroughly mixed with the spirits, and the preparation is ready for use. In case of a bite put five drops (no more) of the preparation into half a tumblerful of pure water; pour the water from one tumbler into another backwards and forwards several times, that the preparation may be thoroughly mixed with the water, and administer a large tablespoonful of the mixture every three or five minutes until the whole has been given. In case the violence of the pain and hæmorrhage or swelling of the bitten part should be but slightly alleviated after the whole has been taken, repeat the dose, prepared with the same quantity of the preparation in the same way, and administer as before. In curing upwards of fifty cases of snake bites I have never been obliged to repeat the dose except in two instances, and have never lost a case. The *cobra* poison is no more deadly than that of a great variety of snakes found in South America, of which may be named the *Cascabel*, or *Rattlesnake*; *Boqui-dorada*, or gilded mouth; *Mapana-sapo*, or frog-headed Mapana; *Mapana-fina*, or *Lachesis*, *Niger*, *Birri*, and *Verrugosa*, or wart snake. The poison of all these varieties produces death (under certain conditions—atmospherical, physical, climatical, and electrical) in from fifteen minutes to two or three hours; but it is found that the gall of each variety (administered as previously indicated) is the perfect antidote for its own poison. The gall of the most deadly kind may be used in cases of bites of those less virulent, and is also applicable in cases of bites of the centipede, scorpion, stingray, star-lizard, or *Lacerta stella*, and is also very effective in dog-bites. The native curers use a tincture of a plant called *Alconcito*, or *solobasta* for bites of the *Cascabel* and *Boqui-dorada*, with very good success in cases of bites, and also as a prophylactic, by inoculation (in the point of the shoulder), for preserving themselves harmless against these poisons. For this purpose incisions are made at the lower point of attachment of the

deltoid muscles, in the same manner as for vaccination, and into these are introduced small pellets of cotton (of the size of a millet seed) saturated with an alcoholic tincture of the *Alconito*. Care is taken to keep within doors and out of the wet and dew for from fifteen to twenty days, after which period the inoculation is concluded. Of the efficacy of this process, I can say that I have repeatedly tested it on dogs, in a district where every dog not inoculated, if bitten by a snake, invariably dies, and have never known an inoculated dog to show any inconvenience from the bite of the most venomous viper. This plant is the *Aristolochia Colombiana*. In Brazil the curers use the tincture of the *Aristolochia milhorneus*, or *Arist. grandifloras*. In the United States the Indians use the *Serpentaria*, or *Aristolochia Virginiana*, and it is more than probable that the *Arist. Cola*, or the *grandifloras*, is to be found in India.

During my researches in this branch of natural history I have collected much interesting and valuable information, all of which I have incorporated in a small work that will shortly be published in English; but the reports of such a frightful number of deaths from snake bites as English journals record as having occurred during the past year in certain parts of India, have led me to address this letter to you that the truth of the efficacy of this antidote for snake bites may be tested by every person who takes any interest in the matter, and that these tests may be so effectually made that a point of such vital importance as the discovery of the specific antidote for these poisons may be known throughout the world.

I indulge the hope that I may see repeated corroborations of the results of my own humble labours in this specialty through so many years.

Your obedient servant,
S. B. HIGGINS.

State of Magdalena, April 10, 1870.

CARBOLIC ACID.

THE following memorandum issued by the Government Emigration Board has been forwarded to us for publication:

Carbolic acid as a disinfectant on board passenger ships must contain not less than 80 per cent. of carbolic, or cresylic acid. It should be either of a pale colour or colourless—be insoluble in two parts of water, but soluble in alcohol, or in two parts of strong solution of caustic soda. This solution may be prepared by dissolving 1 oz. of pure caustic soda in 10 ozs. or half a pint of water.

Fluid carbolic acid may be easily tested for the purpose of passing it for use in passenger ships by the following tests. They will shew when the article is adulterated, but not the precise amount of adulteration. If, therefore, the samples fail to exhibit the proper results, they may fairly be rejected.

Tests for Tar Oils.—Put ten parts of carbolic acid and twenty parts of the solution of caustic soda into a graduated glass tube, and shake them well together for about a minute. If the carbolic acid is sufficiently good it will all be dissolved in the caustic soda; but if any tar oils are present they will either float on the surface or sink to the bottom of the tube, according as they are light or heavy oils of tar. Carbolic acid containing tar oil should be rejected.

Tests for Water, &c.—The carbolic acid may appear to be good by the preceding test, but yet not contain 80 per cent. of pure acid. To ascertain this a piece of twisted paper may be dipped into the acid, and lighted. If the acid be quite pure, it will burn without any hissing noise, but in proportion to its adulteration with water or glycerine, etc., there will be a hissing or spitting sound in the burning. A

more satisfactory test of this kind of adulteration is to put 10 parts of carbolic acid and 30 parts of water into the glass tube, shake them well, and if the volume of the carbolic acid is not reduced more than one degree as marked on the glass, it may be regarded as good; but if it is reduced more than that, the carbolic acid will not be of sufficient strength, and should be rejected.

Carbolic acid powder for disinfecting purposes in passenger ships must be nearly white, and quite dry, and must contain not less than 20 per cent. of pure carbolic and cresylic acids, and the packets in which it is shipped must bear the warranty of the maker that that quantity at least is contained in the powder. The quality of the powder cannot be so easily tested as fluid carbolic acid. But whether it is properly compounded may to some extent be ascertained by the smell, which should be that of the best quality of carbolic acid, and free from any trace of tar.

To ascertain whether powder contains carbolic or cresylic acid in sufficient quantity, take half an ounce of the powder, mix it with two ounces of methylated spirit, and shake them well at intervals for about ten minutes or a quarter of an hour. Allow the mixture to settle, and then pour off the liquor. Again add two ounces of fresh methylated spirit to the powder, shake it, allow it to settle, and pour off the liquor as before, and add it to the first liquor. Allow the spirit to evaporate, and the residue will give an idea of the amount of tarry products in the powder. To ascertain if these products are carbolic acid or not, put them into a glass tube, and add twice their bulk of the standard alkaline solution already referred to. The quantity of tarry product dissolved by the alkali will show the quantity of carbolic acid in the powder. It may be assumed that this test will show about three-fourths of the carbolic acid which is contained in the powder.

If the powder, in addition to the quantity of carbolic acid above referred to, should also contain a certain proportion of sulphurous acid, it may be regarded as an additional advantage.

Government Emigration Board,
8, Park Street, Westminster,
February, 1868.

Our Foreign Correspondence.

FRANCE.

PARIS, June.

As a boy, I always regarded the science of chemistry as a kind of link between the *matériel* of this world and that of the unseen, and the symbols as a sort of mystically musical algebra expressing equations between the absolute and the unknown. But, before proceeding further, I must entreat you, *chers lecteurs*, to excuse the intolerable egotism of what I am about to relate, on the ground of exposing a grievance, the victims of which are legion. Holding chemistry with such boyish veneration, my ambition was to become a chemist. Returning to England after a stay of three years at a French *Lycée*, a specious advertisement met one day my worthy parents' eyes in the columns of the *Times*, setting forth "the advantages of a comfortable home, instruction in chemistry and the allied sciences," by the principal, all for the modest sum of £200 for three years' apprenticeship to this self-asserting impartor of knowledge. Negotiations concluded, I started for ———, introduced myself to my future scientific instructor, from whose paucity of words, I inferred, read much, thought much, and experimented much. But, alas! soon were these fond delusions

to be dispelled. My chief employment for two years was dusting bottles, powdering alum for bakers' use, and rolling hundredweights of sticky cannon-balls into drum-heads, full of small shot, commonly known in that manufacturing district as L—'s "early risers." Reading during business hours was prohibited, and after a day's work extending from 7 till 11, little inclination remained for study. Such is a true sketch of the life of a druggist's apprentice, who, the moment he is freed from his temporary servitude, rushes off to sea, or to any other congenial employment.

Let us consider awhile the comparative relation of the French *élève* with his patron. He leaves college, and passes his degree as *Bachelier des Lettres* at the nearest academical town, finds an enlightened pharmacien willing to board, lodge, and even pay him for his services during the three or four years he is studying for his final examinations, and emerges a full-blown druggist at twenty-five, generally conserving excellent relations with his patron, whom in many cases he succeeds. Then, the comparative relationship of the pharmacien with his French clients stands out boldly in contrast with the kind of social *mal entendu* reigning in England between chemists and their customers. He has in all nations, and in all times, been a butt for the superabundant sarcasm of people with healthy digestions. Molière made fun of him, so did Shakespeare. Let us take their jokes for what they are worth. If Molière had had the colic, would he not, after the manner of his people, have had recourse to the inevitable lavement, and blessed the apothecary armed with the classical squirt. Perhaps he had it, and ungratefully reviled (still after the manner of his people) his quondam benefactor, whose bill appears to have been rather extensive. But one can only afford to quarrel with one's doctor when well and not when in need of him.

Après of prices. Pharmaciens labouring under the disadvantage of prescriptions written in the vernacular are scarcely able to get five francs for a pint of distilled water. Yet they are well paid on the whole—much better than in Germany, where Latin is used as a medium. Collectively, pharmacists hold a higher social status here than in England. The chemists to the Emperor are invited to the Court balls, and figure in the *cotillons* with small swords and immense moustachios. About forty of the Paris druggists are doctors of medicine, but by a legal fiction they cannot practise. Pharmacy and medicine being divorced by law, it is probable that they find their first love more profitable than her titled sister; if so, *tant mieux* for us. The pharmacien carries with him a certain air of staid and respectable erudition, is known to be an educated man, and ranks as such. He has, perhaps, republican ideas, becomes the idol of the people, sits in Parliament, and recommends camphor as the universal panacea for a sick empire. Or he becomes a member of the Academy of Sciences, a knight of the Legion of Honour, and propagates imperial decrees respecting the use of phenic acid.

There is another periodical crusade against absinthe just now. It is stated to contain Indian hemp resin in considerable quantities, just flavoured with wormwood and aniseseed. This is highly probable, distillation leaving a small amount of resinous extractive of a green colour. The effect, too, of this liquor is peculiar and different to the intoxication produced by alcohol, and coincides remarkably with the account of haschisch-eating so admirably related in this journal a short time since. Owing to the epidemic that is raging in Paris, Government has ordered the use of phenol as a disinfectant in the hospitals, and some of the streets are being watered with a weak solution of the acid—a plan that might always be advantageously adopted in hot weather, as anyone who

has made nocturnal excursions in the old parts of Paris can testify.

An admirable system practised in France is that of making the railway companies collect money on parcels which they are entrusted to deliver. This is perhaps almost an absolute necessity here, where honour in money matters is not so conspicuous as in England. However, it is convenient, and prevents much unpleasant letter-writing, an advantage much appreciated by the lazy and suspicious *commerçants* of Paris.

Pharmaceutical Society of Great Britain.

THE ANNIVERSARY MEETING.

[COMMUNICATED BY A MEMBER.]

THE May-meeting of the Pharmaceutical Society was held, in Bloomsbury-square, on the 18th of May, at noon, and excited far more interest, and drew together a larger number of members than have assembled on any similar occasion hitherto. Optimists will, doubtless, consider that this manifestation of increased interest in the affairs of the Society betokens an improved status, and is a sign of the advancement of scientific attainments among chemists and druggists. Cynics, on the other hand, will probably trace it to the fact that divers rumours were in circulation which promised the gratification of the very human passion for a personal row. Hitherto, the Annual Meetings have been invariably characterised by the most loving harmony and mutual admiration. In 1869, however, the Council heard with horror the first rumblings of the earthquake when the proposition of Mr. REYNOLDS, that the proceedings of the Council should be published monthly, was followed by an unaccountable tendency on the part of the meeting generally to have its own way for once, even though its wishes were not approved of by the Council. But, in 1870, a new style of carrying on discussion was introduced; and it may certainly be hoped that this assembly may stand alone, and separated from future, as it certainly is from past meetings, by the wild, ungovernable spirit of acrimony and selfishness which showed but too plainly that pharmaceutical chemists were originally but human beings, and may at any moment become the same again.

Following your desire, Sir, I will endeavour to give you a general idea of the various discussions that took place, in as impartial a manner as possible, though I will not engage that my own opinions shall not in any degree be obtruded.

The President, Mr. H. S. EVANS, took the chair at a quarter past twelve, and very briefly opened the meeting. After the usual form had been gone through, about reading the report—the Secretary rising for that purpose, and being immediately bowled over by the meeting saying in effect that they knew all about it—it became the President's duty to propose that it should be adopted. Your readers will, I presume, have the opportunity of reading the report, which they will find to be a very fair *résumé* of the Society's work during the past year, slightly tinted with the familiar *couleur de rose*. Mr. EVANS in his speech referred to the fact that the Society had just now completed its thirtieth year of existence, and that one generation had almost passed away in connection with its history. It cannot be doubted that the tribute which Mr. EVANS paid to the generation of founders was most thoroughly deserved, and on this occasion should have won at least a cheer from the members present, which, however, nobody gave, the leaders possibly being too much engrossed with their thoughts about the speeches which they themselves had come to let

off. Proceeding to those paragraphs of the report which referred to the examining and educational duties of the Society, the President expressed the views of many members in the following sentences:—

"Is it a right condition of things to perpetuate," he asked, "that the Society, now it is entrusted with new powers, should be at one and the same time an educating and examining body? My answer to this is, that it is not, and that the time is fast approaching when a severance must be made of the examining from the educating functions. I trust, however, whenever the time arrives, the educational will not be so riven from the examining functions as to throw it on to private enterprise; and I confess I look to the time when the nucleus of the school we have reared will be converted into a duly and properly and wisely organized collegiate establishment, with endowed chairs, and a governing board independent of all mercenary conditions in its control. Indeed, I see no better mode of appropriating the increasing realized property of the Society than in the endowment of such a College of Pharmacy. Our schools have annually cost us an average of £400 to £500, which income, if derived from the funded capital of the Society, would amply serve the purpose, augmented by a proportion of students' fees."

A few words then followed about the general wretched attendance at the evening meetings; and with an encomium on the retiring members of the Council, Messrs. RANDALL, ORRIDGE, MORSON, SQUIRE, INCE, and CARTEIGHE (the last two in consequence of the new regulations requiring the separation of the Examiners from the Council), the chairman concluded his address. Throughout its delivery Mr. EVANS seemed nervous and ill at ease, as though he anticipated the troublesome conduct of the meeting over which he had to preside. This is not his usual manner, as both Liverpool and London can testify.

Mr. CARTEIGHE seconded the motion; and then commenced a confused and rambling discussion on the Examinations generally, though no one could tell exactly which one in particular was referred to, several speakers apparently not distinguishing the "preliminary" from the "modified." Mr. JAMESON, of Reading, seemed to think that any young man who preferred it ought to be allowed to pass the modified instead of the minor. Mr. WILKINSON, of Manchester, who described himself as the local secretary of that city, gave a perfectly fancy sketch of the work of a country chemist's apprentice, which, besides the compounding of horse medicines and window cleaning, included the pleasant occupation of filling, scaling, and labelling bottles of blacking, of all things on earth—in these days of DAY and MARTIN too! I gathered from Mr. WILKINSON that his suggestion was to make the severity of the examinations in inverse proportion to the ages of the candidates. At this point Mr. INCE asked, with an evident desire not to put the question ironically, what kind of examination the preliminary should be made. Then the discussion proceeded, nearly a dozen gentlemen taking part in it, but none perhaps having the slightest desire that their suggestions, even if they offered any, should have any practical effect. If the diploma of the Society is to have any value at all, it must be won by work and study. Let no young man with health and strength on his side fear to fit himself for the struggle with the examiners. If he finds them an austere lot, there will be the more credit to him if he pass their ordeal; and if he fail, it will only show how greatly he must have needed the preparation which he has already, and still must, submit to. It is a little too much to ask for our sympathy for those poor things who have been frightened out of the trade altogether by the bare prospect of having to work up

for an examination. Surely they are best gone to more congenial occupations, millinery for example.

Then arose Mr. DICKENSON, who, as a thorn in the side of the Society for many years, is remembered but too well by most of the senior members. Years ago he carried on a Chancery suit with the Society, which, having caused a great waste of money, was finally won by the Society. The action, I believe, had some connection with the second opening of the Society to the trade in 1852. This time Mr. DICKENSON came forward as the champion of the trade against the co-operative stores. It was not a forlorn enterprise in such company, for London chemists are sure to wax furious if these stores are only mentioned, and therefore the meeting cheered Mr. DICKENSON vociferously as he denounced them, and, entirely forgetful of their dignity as members of a learned society, they shouted defiance, even though such defiance was worse than impotent. As far as it went, the storm was an advertisement for the enemy. It can be of little use to bark when one has no hope of being able to bite; and besides, right or wrong, the theatre of a learned society—and we are proud enough sometimes to claim this distinction for the Pharmaceutical when it is to our advantage—ought never to be the arena for trade disputes or for the display of anything like "rattening." Mr. DICKENSON, however, is a fluent speaker, and a forcible one in the hustings sense. Twice in the course of his speech he referred to this as probably the last occasion of his coming among us, a prophecy which singularly reminded one of a well-known speech of the late Lord DERBY. In this case, however, the audience saw only comedy when pathos was evidently intended. Probably, the orator himself little thought how likely it was that his prophecy would shortly be verified. It would be idle to assume ignorance of the drift of the speech. The chairman was of course directly aimed at, his firm being generally supposed to have done business with the objectionable stores, though it is difficult to see how this business helps to keep co-operation alive. When the harangue had continued for some time the chairman interfered. It was no part of the business of that meeting, as most will admit in their cooler moments, but it could not have been a more unfortunate duty than for Mr. EVANS to have to tell them so. Mr. DICKENSON was immediately a martyr, and he made the most of it. The meeting sympathised with him, and became more turbulent than before; it was a touching picture. Mr. DICKENSON, like the classic hero, had come forth from his retirement, sword in hand, to fight the battle of his fellow-tradersmen where the powerful authorities had failed. Unfortunately, he was destined to fail too, or the scene might have been one of historic grandeur.

When he finished, Mr. SCHACHT arose to pour oil on the troubled waters, by diverting attention to a more appropriate subject. This gentleman is one of the most persuasive speakers among us. There is no clap-trap, no loud self-assertion about him, but a calm appeal to the reason, conveyed in the very best language which can be used. Almost ignoring the fiery speech just delivered, Mr. SCHACHT asked the attention of the meeting to the educational opportunities and deficiencies of the Pharmaceutical Society. He showed that whereas an average of 3,000 applicants for scientific education *ought to be* expected annually, according to present circumstances the Council regarded it as a matter for congratulation that ninety-six young men had, during the past year, passed through their laboratories. The speaker's wish seemed to be that the surplus funds of the Society, instead of being devoted, as the President had hinted, to the establishment of a college of pharmacy in London, should be more generally distributed through the

country, so that a wider field might secure the advantages than is now possible. I am bound to say, as a truthful witness, that the meeting showed but little inclination to enter into the subject raised by Mr. SCHACHT, evidently caring far more for the commercial than for the scientific or educational questions which were brought before them. The snake was scotched, not killed.

Mr. MACKAY (Edinburgh) then came forward with an elaborate statement of the position and prospects, financially and otherwise, of the *Pharmaceutical Journal*. This periodical seems to have been an expensive luxury; but, according to Mr. MACKAY, it would seem that the money has been well spent. He had heard it said by men of high scientific position, that if the Society had done nothing beside the production of this most valuable journal, it would have been worthy of all encouragement and praise. The world may at least give credit to Mr. MACKAY and his friends for amiability and a readiness to be satisfied. Mr. MACKAY had prepared his speech (which included a good many figures) on paper, apparently forgetting that only last year he had prevented Mr. BRETON from delivering a written harangue on the subject of patent medicines, simply on the ground that it was written. But Mr. BRETON had not forgotten it; and in calling the Chairman's attention to the fact, he must be allowed to have scored a point against his Scotch opponent.

Mr. MALTRY, of Lincoln, then made a protest on behalf of the country members against undue London influence and representation; and this concluded the general skirmishing on the report.

The CHAIRMAN next opened the special discussion which had been announced for this occasion, namely, the poison regulations framed and suggested by the Council, which the meeting was asked to approve or reject. The Council felt themselves called upon to do something for the Government and the public, to make dispensing and the sale of poisons more secure, as this appeared to be an understood condition when the Pharmacy Act was obtained. When they first published their proposed regulations, the feeling of the trade throughout the country had been most strongly opposed to the permission of any legal interference with the arrangements for dispensing which each individual might choose to make; and it was further considered by many, that inasmuch as the Pharmacy Act required henceforth a certain amount (and what might be considered a sufficient amount) of special education to be possessed by all chemists, these mechanical arrangements would not in future be thought requisite. Petitions had been received from most of the chief provincial towns in opposition to the Council's wishes, and unquestionably a feeling had arisen that to some extent the Council were in league with the Government or somebody else to tyrannise over the trade generally. Unfortunately the Council did certainly give every opportunity for this impression to gain ground, partly by ignoring the existence of any such sentiment, but far more by their aristocratic or Tory prejudices against the fair and full reporting of their deliberations. Now that the trade has begun to take an interest in their proceedings, it will certainly not be satisfied to accept the dictates of an irresponsible hierarchy much longer, without also being convinced itself by the arguments which convince the Council also. The regulations suggested are three, and may be condensed into a few words, thus:—(1) All poisons to be distinctly labelled as such in the shop or dispensary; (2) and for further safety, to be kept either in a separate apartment or compartment, or in special vessels, or in bottles tied over or otherwise secured; (3) when dispensed, poisonous medicines to be sent out in distinctive bottles or bottles made dis-

tinctive. The Chairman proposed that these regulations should be adopted, and Mr. HASELDEN seconded the resolution. Neither the President nor the Vice-President, however, was at all effective in urging the resolution upon the meeting.

Again Mr. DICKENSON came forward and pounced upon all three of the regulations in a somewhat satirical manner. Mr. URWICK fully coincided with Mr. DICKENSON, giving an instance of a lady taking a lotion instead of a mixture, both being in similar bottles; the inference apparently being that a mistake of that sort ought not to be guarded against, or the public will trust too much to mechanical contrivances. Mr. BRADY next arose from among the councillors, but he proved also on the side of the rebellious ones. From him we learned that Messrs. DEANE and SQUIRE had been also opposed to the majority on this question, and Mr. BRADY hinted that his reason for thus somewhat betraying the secrets of the august assembly was, that no report had been given, and consequently nobody knew whether the Council itself had been unanimous or not. Mr. BRADY seemed disposed to rest his case on the published opinions of Mr. BELL. Mr. WILKINSON (Manchester) then formally moved the rejection of the poor regulations in a long speech. Legislation on this subject, he said, had been a series of blunders; the Council were not what they had been, nor what they should be towards us, and poison bills would do more good than harm. Mr. VIZER seconded him, and Mr. COLLINS followed on the same side; but the speeches seemed by this time only slaying the slain, for as yet no champion had come forward to advocate the views of the Council.

Mr. WATTS was the first to resist the flood of scorn that was being poured on the regulations, by pointing out that we should consider it as a question for the public, and not for the trade. Next Mr. EDWARDS addressed the meeting, and his speech, by far the best that was delivered on the subject, did much to make things "take a turn." Those who had previously resolved to be in opposition, of course continued to object; but those who wished to hear the arguments on either side and then decide, who were, to use an Americanism, "on the fence," prepared to take a leap either way, came down into the Council's pastures after the speech of Mr. EDWARDS. He first pointed out that many gentlemen seemed to object to the regulations because they already carried them out—an incomprehensible piece of logic. But the chief part of his speech was the elucidation of the idea brought forward by Mr. WATTS, that it was a question in which the public were concerned more than the trade. Referring to the advantages accruing from the Pharmacy Act, he said: "While they exercised these powers for their own advantage and comfort, were they not also willing to take a larger view of the matter, and exercise them for the good of the public? He would beg leave to ask any gentleman to try and put himself outside the limits of the trade, and imagine he was not a chemist, and ask himself what would be his feelings if a neighbour or friend, a relative or a child of his own, were poisoned with some oxalic acid sold for salts, or something of that kind? What would he say as he stood and looked at the cold remains of his child? Has everything been done that would have prevented this accident? Was every precaution taken to stay the hand of death, and keep the silent seal of the destroyer from those cold lips? Am I satisfied that these dangerous things, on which the life of my child has been hanging, have been guarded and sealed, and kept with every possible precaution against accident? Are there no regulations that can affect these things, and make these accidents less likely to happen? No, there is no regulation.

They say they know their own business best, and they would not have any regulations. But they did not know their own business best; they have not known their own business best; and for the last ten years the feeling has been rising that they do not, or these accidents would not happen. It is quite true that some honourable and careful men may, but I want a regulation that will apply, not only to the careful and painstaking man, but to every one; not liberty for some men to do so-and-so, but a law which shall bind every man. I want it to apply, not only to the chemist at the West End, but to the careless druggist who keeps the chandler's shop at the corner of a poor street—to every man who sells poisons—compelling him to take all those precautions that can justly be required before a human life is sacrificed. But regulations were proposed; a string of them were drawn up, but they were objected to, and refused. One man said that he did not like putting his poisons in a cupboard; and another said that it was a little trouble to put them in a corner; and another, that he did not approve of coloured labels; and there were some other objections of that sort, but it all resolved itself into this, that it was rather more trouble than they chose to take. I can only say this, when these effects come before me, if that is the principle on which these men make laws—if they mind a little trouble; if they think a great deal of an unnecessary precaution; if they are so careless that a little fidgetiness even is sufficient ground for rejection—it is high time that other people made laws for them.” Then Mr. PEDLER (who had sat quiet a marvellously long time) supported Mr. EDWARDS'S views, but without adding anything new. Mr. SUTTON (Norwich) asked if the medical men were to be legislated for, and held that, if not, much confusion would ensue. Mr. FITCH gave a few personal experiences, which only went to show that he had never taken the trouble to read the Act. Mr. SANDFORD next answered some of the opposition arguments in detail. Incidentally, Mr. SANDFORD, whose authority in such a matter is second to none, mentioned the fact that he never had and never intended to label paregoric or similar medicines with a poison label; and this assertion from him may be regarded by chemists throughout the country as a settlement of the anomalous state of things which has existed since the Act became law, and has caused endless confusion. Afterwards, Mr. REYNOLDS (Leeds) and Mr. BLAND followed against the regulations; and when Mr. CARTEIGHE rose to speak for them, there was so much uproar that for a time he could not be heard. He is good for a fight though, and this difficulty served to rouse him. Speaking to the meeting with characteristic energy and spirit, he told them in effect that if they did not submit to these, they would have more stringent laws laid down for them next year by the Government itself; but the members showed by tumult and uproar that they were not to be moved by these menaces. Mr. SQUIRE, who had, as before remarked opposed the regulations in the Council, spoke now, but left a very vague idea of what his present views were. Indeed it appeared to me that he had nearly changed his mind, but that when he got up to say so, thought he would not, and therefore said something else.

After a few more speeches, during which the confusion, was increasing, a show of hands was taken, the result of which the Chairman declared to be in favour of the amendment. This seemed doubtful, however, to many, and Mr. CARTEIGHE demanded a division, but the Opposition, either doubtful themselves or determined not to part with their present advantage, resisted. Finally, the conclusion came to was, that the question should be reconsidered by the new Council, and brought before the next annual meeting.

The excitement now having somewhat subsided, Mr. SCHACHT again rose calmly to ask for consideration for his educational scheme, which occasioned a short discussion; but this was again soon shunted by anti-co-operationists, who had determined to have their say out. A personal row ensued, Messrs. VIZER, URWICK, and DICKENSON vehemently attacking the President, and requesting him to retire from the Council. Once more Mr. SCHACHT brought forward his ill-used resolution, which was this time carried unanimously to get it out of the way, and again the meeting returned to its trading quarrel. The President left the chair; Mr. MORSON protested against the undignified course that had been taken by the members, and at last, the fury having spent itself, the rest of the formal business was completed, and the members separated.

The sequel to the narrative given by our correspondent is unprecedented, and decidedly unpleasant. The scrutineers were selected at the annual meeting, whose duty it was to examine the voting papers, and present their report to an adjourned meeting, which is usually a very formal affair. The plan of conducting the scrutiny, as we gather from the report, is this. The sixteen gentlemen who undertake the labour are divided into groups of four. One of each four is elected chairman, and he calls out the names from the papers, these being written down by the other three. Mr. DICKENSON, whose name appears prominently in the foregoing report, especially in opposition to the President, was the chairman of one group, and he appears to have carried into execution the strange course of omitting the name of Mr. EVANS 103 times, and substituting for it that of either Mr. WILLIAMS or Mr. SANGER. Suspicions arose, we presume, in consequence of the singular difference as to the names mentioned which Mr. DICKENSON'S table showed compared with the rest, and, therefore, at the adjourned meeting a fresh scrutiny was resolved upon, and Messrs. TURQUAND, YOUNGS, & Co., were employed to conduct it. The result of their examination of the papers made no actual difference in the election of any member of the Council, but it gave Mr. EVANS the sixth position on the poll, instead of the tenth, which he occupied before. Mr. DICKENSON attended the second meeting of the scrutineers, and there acknowledged that he had purposely misled his fellow scrutineers, and had signed the first report, knowing at the time that it was not accurate. The members generally, and particularly the two gentlemen who in one sense had been most benefited by this procedure, expressed the utmost indignation; and as a result, Mr. DICKENSON wrote to say that he should tender his resignation as a member of the Society. In his letter, he states: “I was put on the scrutiny against my expressed objection; I was totally ignorant of the method by which the scrutiny was taken, and honestly set to work to do the duty; but finding the system was liable to errors, in a moment of somewhat excited feelings, I resolved so far to vitiate the return as to obtain an alteration of so unsatisfactory a plan. I entirely repudiate any premeditation or malice; it was accidentally commenced, and continued without any attempt at concealment, fully believing that anything I did would not alter the return of anyone to the Council. The distribution of the votes was purely a fancy; the subtraction from Mr. EVANS was by no means on personal grounds, for I do not know him, and to him I owe an apology.”

It was a most suicidal policy for Mr. DICKENSON to take; a speech of his at the meeting, or a letter in the Journal, would probably have reformed the system of scrutiny of which he complains; but one thing is most certain, the system was open to any amount of falsification on the part

of the chairmen. That Mr. DICKENSON has now brought this fact most effectively home to the Society is not to be doubted, and a remedy will henceforth doubtless be found. In the examination made by Messrs. TURQUAND, YOUNGS, and Co., there was, as it were, an extra chairman to each section, so that the examination was checked at every point; and Mr. YOUNG stated that the three who took the votes down agreed in numbers in each case. When we say that not in a single instance did their returns exactly tally with those of the amateurs, we have said enough to show that it was time some alteration was made in the method of conducting the scrutiny.

The following is the report of Messrs. Turquand, Young, and Co., of their examination of the voting papers at the late election for the Pharmaceutical Council. The table also shows the results of the first scrutiny. The first fourteen gentlemen were elected:—

Names of Candidates.	No. as per Scrutiny on Thursday.	No. as per Scrutiny on Monday.	Number of Votes.	
			As per Scrutiny on Thursday.	As per Scrutiny on Monday.
Woolley, George Stephen	2	1	1053	1064
Brown, William Scott	1	2	1064	1063
Reynolds, Richard	3	3	1018	1012
Stoddart, William Walter	4	4	985	1004
Abraham, John	5	5	962	954
Evans, Henry Sugden	10	6	802	905
Savage, William Dawson	7	7	874	902
Bottle, Alexander	6	8	894	893
Haselden, Adolphus Frederick	8	9	845	851
Edwards, George	9	10	838	839
Groves, Thomas B.	11	11	792	780
Hanbury, Cornelius	12	12	771	762
Sutton, Francis	13	13	745	749
Atherton, John Henry	14	14	730	720
Gissing, Thomas Waller	15	15	681	688
Williams, John	16	16	659	604
Savory, Charles Harley	17	17	594	593
Sanger, William Albert	18	18	588	542
Stacey, Samuel Lloyd	19	19	397	384
Betty, Samuel Chapman	20	20	385	879
Hornsby, John Harwood	22	21	360	358
Greenish, Thomas	21	22	363	355
Stott, William	23	23	342	347
Barnes, James B.	24	24	328	325
Quiller, Charles Rowett	25	25	297	299
Carr, John	26	26	205	193
Breton, Walter	27	27	152	147
Total			17,724	17,687

THE CONVERSAZIONE.

"The noon beheld them full of lusty life; the eve, in beauty's circle proudly gay." This poetic statement is applicable to the ease of those gentlemen who had taken part in the annual meeting, and who came to the *conversazione* in the evening. The few hours' interval between the conclusion of the first and the hour for opening the South Kensington Museum to the visitors, had been sufficient, it may be presumed, dinner also intervening, to cool them down to the temperature necessary for enjoyment. Three thousand, more or less, was the estimated number of visitors, including a good thousand—I may say a thousand good—ladies. The Museum is excellently suited for this purpose; its large spaces, long corridors, handsome and spacious theatre, besides a magnificent picture gallery, and other collections of much interest, giving opportunities to gratify various tastes. "No pills, nor any other medicine," were there, nor anything to remind the druggist of his occupation, or to expose him before his distinguished visitors; but in the place of things pharmaceutical, music, painting, and society were all present to charm away the evening. The band of the Grenadier Guards, under the direction of Mr. D. Godfrey, performed at intervals during

the evening; and Mr. E. Fagan led the Orpheus Glee Union through an attractive programme, which was broken up into a series of little concerts. There was nothing to mar the pleasure of the evening, which seemed to be enjoyed by all. The following were among the most notable visitors:—Sir John Bowring, Sir William Tite, M.P., Dr. Brewer, M.P., Professor Ansted, Professor Guthrie, Professor Barford, Professor Soubeiran of Paris, Professor Tidy, Professor Tuson, Dr. Hooker, Dr. Headlam Greenhow, Dr. Letheby, Dr. Langdon Down, Dr. Silver, Dr. Birkett, Dr. Tweedie, Dr. Playfair, Dr. Radcliffe, Dr. L. S. Beale, Dr. Septimus Gibbon, Dr. Murchison, Dr. F. J. Farre, Dr. Sidney Ringer, Dr. F. Ramsay, Dr. Silvester, Dr. R. H. Semple, Dr. Ballard, Dr. Vinen, Dr. Grimes, Dr. Jackson, Dr. Copland, Dr. Aldis, Dr. Greenhalgh, Dr. Tanner, Dr. Anderson, Dr. Dobell, Dr. Thompson, Dr. Francis, Dr. Bradley, Dr. Miller, Dr. Alison, Dr. Dickson, Dr. Billing, Mr. P. L. Simmonds, Mr. Jabez Hogg, Mr. George Cruikshank, Miss Garrett, etc.

REPORT OF THE COUNCIL.

In tendering its first Report since the Pharmacy Act of 1868 came fully into operation, your Council has great pleasure in congratulating the Society upon its social and financial advancement, and the general approval by the trade and the public with which the new state of things inaugurated by the Pharmacy Act has been received.

The financial statement shows a large increase of members, whose subscriptions have considerably augmented the revenue of the Society.

Your Council notes with satisfaction that, during the past year, the sum of £4,066 10s. has been invested in the Government funds to the credit of the General Account; that a further sum of £1,000 remained on deposit with the bankers; still leaving a balance in December in the Treasurer's hands of nearly £1,000.

It is a matter of congratulation that a large number of those who have been registered as Chemists and Druggists have joined the Society as Members. But perhaps the most promising feature is the great addition to the roll of Registered Apprentices and Associates, whose alliance with the Society must tend to the practical advancement of the body; they are the earnest of the future. The crowding of the laboratory and lecture-hall is most encouraging to the prospect of the progress of pharmacy.

While regarding this progressive work with so much satisfaction, it seems scarcely necessary to point out that it could not be accomplished without increased cost; but your Council considers that the outlay on this head has been well expended. The call for further accommodation in the educational department has been carefully answered by your Council; extra benches have been fitted for students, including proper arrangements for the prosecution of analytical study, and a third teacher provided in the laboratory. No less than ninety students have entered to the chemical lectures, ninety-three to the botanical, and ninety-six to the laboratory course.

Education has been, from the commencement, one of the most prominent objects of the Society's care, and during the past year a desire for its acquirement has progressed even beyond the most sanguine hopes of former times.

As a consequence of the increase in the number of persons seeking admission to the Register, by what may be called the natural channel, and from the provision of the Act, which permitted a modified examination for assistants of three years' standing, the labours of the Board of Examiners have been very greatly increased. It is due to the members of this Board to say that they have shown a devotion to their work worthy of all praise.

Greatly increased responsibilities having fallen upon the Board, in consequence of the new conditions imposed by the Pharmacy Act, it was found necessary to review and amend the regulations.

Primarily the test of a liberal education presented itself as a matter of paramount importance. The Bye-Laws requiring that, in future, the Preliminary, or Matriculation Examination, should form a necessary precursor to the

Minor and Major Examinations, it became a question how this Preliminary Examination should be conducted so as to cause the least possible inconvenience to candidates resident throughout the provinces, and still insure a general uniformity in the examinations; hence the arrangement of a written examination, under the supervision of the Local Secretaries, on the principle of the Local University and Science Schools Examinations.

The operation of this new arrangement, so far as it has gone, has proved most satisfactory, and your Council congratulates the Board of Examiners upon the highly practical test it has thus established of the fitness of young men entering the profession to take up the great principles of the science of pharmacy. Other alterations in the regulations have been made, which are comparatively of minor importance.

It is a matter of congratulation that the responsibility devolving on the Board of Examiners has been relieved by the appointment of a Government Visitor; and your Council feels that the weight of this gentleman's approval in the character and manner of the conduct of the examinations, is an advantage both in the interest of the public and of the candidates.

At the last annual meeting it was resolved that the proceedings of the Council should be published in the Journal, the mode and amount of publication being left to the Council to arrange. Your Council trusts that it has satisfactorily responded to this instruction by the amount of publicity given in the Journal to its transactions.

The Journal account of 1869 does not show a balance to the credit of the funds of the Society, as has been the case for the last two or three years; but it must be remembered that the profit or loss on the Journal depends mainly on the number of members, associates, and apprentices, to whom it is supplied without charge; and during the past year their increase has been so considerable as to swallow up the profit shown on former occasions.

Your Council, having regard to the increased number of members of the Society, has carefully considered the position of the Journal and the influence it was designed to exercise over the body of pharmacutists and chemists and druggists, and has decided on making it a weekly publication, commencing in July next, the importance of the discussions appearing in its pages, and the desire for more speedy pharmaceutical information, together with its increased popularity, clearly showing that such a change is desirable.

In the matter of legislation, your Council has not been unmindful. Certain imperfections, introduced as amendments into the Act of 1868, needed rectification, and have been corrected by the Act of 1869.

The amendment first proposed had for its object the removal of a disability of medical men, and in effect restored the Act to the condition of the Bill originally drafted by the Society. But Dr. Brewer, discerning an obscurity as to the construction of Section 17 in regard to the labelling of compound medicines containing poisons, proposed an alteration to exempt medicines *dispensed under the prescriptions of qualified medical men* from the requirements of this section. Your Council, seeing the injustice which might arise from such a course to dispensers, into whose hands prescriptions might be put written by persons unknown to them, or who might be required to dispense medicines containing poisons even without a written prescription, at once took energetic measures, and spared no pains to obtain the exemption of such medicines also.

Assistants excluded through various causes from the provisions of the Act of 1868 were relieved from their disability by the amendment of 1869; 328 have secured for themselves the privilege of the extended time, and it is gratifying to note that of this number many have already passed creditable examinations, and been placed upon the register of chemists and druggists.

Your Council, impressed with the duty imposed upon it by the Pharmacy Act to regulate the schedule of poisons, and promulgate regulations for the keeping of them, issued an addendum of preparations of certain poisons named in the former schedule; and has further suggested for the adoption of the Society regulations, either one or all of which should either separately or conjointly be used in the keeping and storing of poisons. These regulations seem to meet every variety of circumstance and exigence, and it

will be for this meeting to decide on the adoption or rejection of them.

Remembering the difficulties in the way of making a positively correct register of chemists and druggists at the outset, your Council cannot but consider that the Registrar was successful to a remarkable degree, and that it is a matter of surprise how few persons have been registered erroneously. So far as reliable information has been obtained, since the publication of the Register (and it is only from such information that the Registrar can have knowledge of impositions practised on him), steps have been taken by the Council to erase names improperly inserted. In some cases it has been found necessary to institute legal proceedings, as well against persons having obtained registration by fraud or error, as against others altogether unregistered who have been found dealing in poisons, and these proceedings, although involving both trouble and expense, have been attended with success. It is the manifest duty of your Council to protect the public on the one hand, and the legitimate chemist on the other, in these matters; but, at the same time, to avoid harsh or vexatious prosecutions, than which nothing could tend more surely to bring the Pharmacy Act into disrepute.

There has been a magisterial decision, doubtless fresh in the minds of all, in which a Pharmaceutical Chemist was convicted and fined for *dispensing a prescription* containing poison, without due compliance with the provisions of the seventeenth section of the Act. The decision of the magistrates in this case was so obviously opposed to the whole spirit of the Pharmacy Act, so calculated if unchallenged to inflict hardship and injustice on dispensers, that your Council, as guardians of the whole trade, as well as trustees for the public, at once resolved to have the question brought before higher authority, and have satisfaction in learning that the conviction was quashed by the Court of Queen's Bench.

With regard to the Benevolent Fund, one of the primary objects for which the Society was called into existence, your Council has to regret that, notwithstanding the immensely enlarged community admitted to the benefits of this fund by the operations of the Pharmacy Act, only a very small addition has been made to the list of annual contributors. The increased number of persons eligible to participate in this fund necessitates an enlarged liberality towards its exchequer; but unfortunately your Council has not seen the augmentation which its sanguine hopes led it to anticipate. Of the balance in the hands of the Treasurer at the end of 1869, the sum of £500 has been invested; and in view of the desirability for electing one fresh annuitant at least at the next usual period for election, your Council has ordered the transfer of £500 from the General Fund, to the credit of the Benevolent Fund Account; and it is hoped that this appropriation of the Society's funds will lead to a large and hearty response from chemists and druggists generally.

During the past year an International Congress of Pharmaceutical Societies and Unions was convened at Vienna, and, in response to the invitation of the Executive, your Council sent your President and Professor Redwood to represent British Pharmacy. From the report of these gentlemen it would appear that their mission has been conducive to a cordial reciprocity of feeling between foreign Societies and our own, and by affording an opportunity of personal interchange of views and an explanation of the progress of Pharmacy in Great Britain, has created a higher appreciation of the improved position—social and political—acquired by Pharmacy in this country.

In compliance with a generally expressed wish, a very material alteration in the character and arrangements of the annual *conversazione* has been made this year. Ladies have been invited, to accommodate whom with comfort the rooms in the Society's house are wholly inadequate.

Permission has consequently been sought, and most courteously and promptly granted by the Lords of Committee of Council on Education to use the rooms of the South Kensington Museum, than which no more appropriate building could have been selected, where, amidst a vast assemblage of objects of the greatest interest and beauty, the members of the Society may enjoy the special pleasure of viewing the valuable collection of paintings bequeathed to the nation by the late Jacob Bell.

The *conversazione* will be held there on the evening of

the Annual Meeting, and the President, Vice-President, and Council hope that all members who can make it convenient will honour them with their company, in response to the official intimation.

MEETING OF THE COUNCIL, May 4th, 1870.*

MR. HENRY SUGDEN EVANS, PRESIDENT, IN THE CHAIR.

MR. HASELDEN, VICE-PRESIDENT.

Present—Messrs. Abraham, Bottle, Bourdas, Carteighe, Edwards, Hills, Sandford, Savage, Squire, Stoddart, and Williams.

The minutes of the last meeting were read and confirmed.

The Secretary reported that the Auditors nominated by the Council at their last meeting, were willing to accept office, if elected.

The report of the Finance and House Committee was presented, showing on the General Fund Account a balance in the Treasurer's hands of £2,098 4s. 5d., and submitting for payment Accounts amounting to £751 5s. 4d.; and on the Benevolent Fund Account a balance of £409 9s. 7d.

Resolved—That the report be received and adopted, and payments made.

The Report and Proceedings of the Library, Museum, and Laboratory Committee having been read, it was

Resolved—That it be received and adopted.

The Annual Report of the Council was read, and, with some verbal alterations, agreed to.

Letters from the Editor and Sub-editor of the *Pharmaceutical Journal* were read in reference to the communications made to them, by desire of the Council at their meeting in March, respecting the Editorial staff, and arrangement as to the future publication of the *Journal*.

Resolved—That the said letters be acknowledged and referred for consideration to the June Council.

Notice of Motion for the Meeting of Council, June 1st, 1870.

MESSRS. BRADY AND DYMOND.

1st. That in view of the impending change in the mode of conducting the *Pharmaceutical Journal*, and in order to introduce the New Series under conditions the most favourable for commanding literary and financial success, the Secretary be instructed to insert advertisements forthwith in the *Times*, *Athenaeum*, *Chemical News*, *Scientific Opinion*, and *Nature*, inviting applications from gentlemen capable of undertaking the duties of Editor and Sub-editor respectively. All applications to be forwarded to the Secretary on or before the 15th June.

2nd. That a Special Committee be appointed to meet on the 21st June to select from such applicants a limited number for the consideration of the Council, and on the 22nd June a Special Council Meeting be held to receive the Report of the Committee and proceed to the election of Editor and Sub-editor.

Notice of Motion for Council Meeting, June 1st, 1870.

MR. DYMOND.

That it is desirable on the commencement of the New Series of the *Pharmaceutical Journal* that the proceedings of this Council be more fully reported in that and other Journals than is the case at present, and that reporters, not exceeding two in number, be admitted to the meetings of the Council; that their reports be revised by the Journal Committee, and any matter withheld which it may deem unsuitable for publication.

Pharmacy in Ireland.

With reference to the proposed Bill to enable persons registered as Chemists and Druggists in Great Britain to exercise their business in Ireland, it was stated that the Solicitor-General for Ireland was about to introduce a Bill to regulate the sale of poisons in Ireland, and that it was probable the Bill proposed by the Council would be engrafted upon his.

Resolved—That the report and proceedings of the *conversazione* Committee be received and approved.

On the report of the Benevolent Fund Committee, a grant of £10 was made to the daughter of a deceased member at Southampton.

BOARDS OF EXAMINERS.

April, 1870.

ENGLAND AND WALES.

Major Examination, 6 candidates examined, 5 passed.

Minor	"	23	"	"	14	"
		29			19	

Preliminary Examination, 12 certificates were received and approved.

SCOTLAND.

Minor Examination, 2 candidates examined, 2 passed.

Modified	"	6	"	"	5	"
Preliminary	"	17	"	"	13	"
		25			20	

Resolved—That the sum of ten guineas be granted for the expense of providing books for prescriptions for the use of the Examiners and Students.

Resolved—That M. Jean Baptiste Dumas, of Paris, and Henry Enfield Roscoe, Ph.D., F.R.S., of Manchester, be elected honorary and corresponding members of the Pharmaceutical Society.

MEETING OF THE COUNCIL, May 18th, 1870,

MR. HENRY SUGDEN EVANS, PRESIDENT, IN THE CHAIR.

MR. HASELDEN, VICE-PRESIDENT.

Present—Messrs. Abraham, Bottle, Bourdas, Brady, Carteighe, Deane, Edwards, Hills, Ince, Mackay, Morson, Raudall, Sandford, Savage, Squire, Stoddart, and Williams.

PROPOSED REGULATIONS FOR THE KEEPING AND DISPENSING OF POISONS.

Memorials against were read from Chemists and Druggists at Oxford, and from the Chemists' Association at Liverpool.

* From the *Pharmaceutical Journal* for June.

Pharmacy and Chemistry.

ON THE EFFECT OF ETHYLIC ALCOHOL ON THE HUMAN BODY.

A VERY valuable paper was read before the Royal Society in May on the physiological action of ethylic alcohol due to the conjoint labours of Dr. PARKES and Count WOLLOWICZ. The experiments were made on a healthy soldier, and the authors describe them in detail and at some length. The experiments made with absolute alcohol indicated that small doses increased the appetite, but that as the doses progressively increased the appetite lessened, until it was ultimately almost destroyed by doses larger than four ounces. The effects produced would probably vary very considerably with different persons, even if in good health, and if the actions were complicated by any disease or weakness, very small quantities would probably have considerable effect. The action on the heart was also carefully studied in respect to the increase in the number of its beats.

ON A BROWN HAIR DYE.

The use of lead and sulphur dyes for the hair has received a new impetus. Mr. G. McDONALD shows, in a communication to the *American Journal of Pharmacy*, how a preparation containing lead and sulphur in solution may be made and used as a hair dye with no more danger, in his opinion, than in the use of the ordinary lead and sulphur dyes. This is attained by the use of hyposulphite of sodium, a salt which by oxidation is converted into sulphate of the base and free sulphur. The solution is prepared by adding four parts of hyposulphite of sodium to one part of acetate of lead, both in aqueous solution; the precipitate of hyposulphite of lead which is at first produced is redissolved by the excess of hyposulphite of sodium present. When applied to the hair, or otherwise exposed to the oxidising influences of the atmosphere, this solution is decomposed, one of the products of decomposition being the dark brown sulphide of lead to which all lead and sulphur dyes owe their efficacy. The author recommends the addition of rose or other perfumed water, and glycerine. The slight turbidity which is produced soon after the solution is made is due to impurities; these, however, soon subside, and the solution remains clear so long as the bottle is kept tightly corked.

ON GRANULAR CITRATE OF MAGNESIA.

Mr. H. C. ARCHIBALD points out, in a communication to the *American Journal of Pharmacy*, that the English so-called granular citrate of magnesia consists principally of tartaric acid, bicarbonate of sodium, sugar, and a trace of magnesia. The author found it practically impossible to obtain a preparation that could be properly called granular citrate of magnesia, having at the same time effervescing properties by the direct union of citric acid and magnesia. After a series of experiments to ascertain whether a granular salt could be made which would contain citrate of magnesia, and at the same time be effervescent and perfectly soluble, the following formula was adopted, which, if strictly adhered to, will afford a beautiful preparation, possessing decided laxative properties, and very acceptable to the palate:—

Tako of Acid Citric, powdered	...	...	4 lbs.
Magnesia Calc.	...	...	1½ "
Soda Bicarb.	...	...	3 "
Acid Tart.	...	...	3 "
Pulv. Sach. Alb.	...	...	6 "
Ol. Lemonis	...	...	½ fl. oz.
Alcohol fort. q. s.			

To the powdered citric acid add the sugar and mix thoroughly; then add the soda, magnesia, and tartaric acid;

pass the whole through a No. 40 sieve, to ensure its being thoroughly mixed; moisten the powder with strong alcohol, and pass through a No. 8 sieve, and place on a tray made of wood in a warm room to dry; then add the oil of lemon, and bottle instantly. It usually takes twenty-four hours and a temperature of 120° F. to dry the salt perfectly. This preparation, of which the writer has made several thousand pounds, requires skilful manipulation to ensure good results.

ON THE ESTIMATION OF THE ALKALOIDS IN CINCHONA BARKS.

M. H. HAGER determines the total amount of quinine, quinidine, and cinchonine in cinchona bark, by precipitation with picric acid; the method, unfortunately, does not surmount the great difficulty, viz., that of determining the amount of quinine in presence of the other alkaloids. The author proceeds as follows:—Take 10 grammes of the bark coarsely powdered, add 130 grammes of water, and subsequently 20 drops of a solution of caustic potash, sp. gr. 1.3. Boil this mixture gently for fifteen minutes, occasionally stirring, and then add 15 grammes of dilute sulphuric acid, 1.115 sp. gr., boil for fifteen or twenty minutes; allow it to cool a little, pour it into a measure, and make up with water to 100 c.c. A portion of the liquor is then filtered into a cylindrical glass vessel, graduated say for 60 c.g., and to this is added 50 c.g. of a solution of picric acid, saturated at the ordinary temperature; this quantity will generally be found sufficient to effect the complete precipitation of the alkaloids. The mixture is allowed to stand for half-an-hour, the precipitate collected on a weighed filter, carefully washed and dried at a temperature of 100° F. The proportion which would have been derived from the total quantity of liquor may be calculated from the weight of this precipitate, and hence the amount derived from 10 grammes of bark. According to the usual composition of the Calisaya bark, 10 grammes of this variety should yield at least 0.824 grammes of picrate, corresponding to 0.35 grammes of the mixed bases, quinine, quinidine, and cinchonine.

ON THE PRESENCE OF MANGANESE IN MILK AND IN BLOOD.

Professor E. POLLACCI, after analysing several varieties of human blood, differing in respect to the sex, age, and temperament of the persons from whom they were derived, arrives at the conclusion that manganese is one of the essential constituents of the blood. The analysis of the milk of woman, the cow, the goat, and the ass, indicated that milk contains manganese even in greater proportion than the blood. The amount of manganese in these two fluids is not, therefore, in relation to the amount of iron which is found in greater proportion in the blood. The author describes in detail the process by which he detects the presence of manganese in the milk, of which the following is a brief account:—300 grammes of milk are evaporated to a pasty consistence, and then completely carbonised, and subsequently calcined in a platinum crucible. The ash is then exhausted with successive quantities of distilled water, the extraction of all the soluble parts being ascertained by the fact that nitrate of silver ceases to give a precipitate with the decanted fluid. The residue is then introduced into a test-tube, treated with a small quantity of nitric acid, and evaporated to dryness. The residue, after cooling, is treated with a small quantity of diluted nitric acid, and heated to boiling; a small quantity of binocide of lead is then added, and the mixture again boiled for about a minute. After subsidence, the purple colour of the fluid may be readily seen, due to the presence of permanganic acid derived from the manganese contained in the milk. A similar method may be employed to determine the presence of manganese in the blood.

SIDNEY W. RICH.

Veterinary Notes.

BY W. HUNTING, M.R.C.V.S.

INDIGESTION.

INDIGESTION, as a disorder of the lower animals, is chiefly interesting on account of the many serious diseases arising as its sequel. We are occasionally called upon to treat it as a primary affection in all the domestic animals, though cases of it pure and simple are most common in dogs. It will be as well to first consider it generally, and then, if space permit, go on to its complications.

For all practical purposes, we may define it as functional derangement of the stomach, though other parts of the digestive apparatus may be to blame.

Perfect digestion requires that food should be mechanically reduced to small portions, and that the secretions of various glands should act upon it. Anything which interferes with these actions is a cause of indigestion. When food is improperly masticated, it reaches the stomach in a form unfit to be properly acted upon by the gastric juice.

A long fast renders a horse greedy, and he then bolts his food; bad teeth interfere with mastication; in both cases we have a cause of indigestion. To these we may add improper food, which may be either indigestible, as straw and bran, or in a form unsuited to the stomach, as is the case with great masses of very slightly nutritious substances, for instance, boiled turnips and potatoes.

The stomach may be injured by gaseous distension, as in horses known as "wind-suckers," or "cribbers." This distension weakens the coats of the organ, thus interfering with the natural movements of its contents, and probably with the secreting glands through the nerves.

The movements of the stomach are of even greater importance in the ox and sheep than in the horse, as the first stomach of ruminants possesses no true digestive function; unless the paunch can eject its contents, they remain and decompose, causing serious mischief. Any substance, then, in the stomach remaining undigested causes mischief at first temporary, but by repetition serious.

In treating indigestion, we require to know whether the food or the digestive apparatus is in fault, and if the latter, what part.

An irritant in the stomach of many animals, notably the dog, is at once expelled by vomiting. The horse cannot vomit. Should an irritant pass from the stomach to the intestines, it as a rule causes diarrhoea. The horse has a small stomach and very large intestines, in which undigested food more often collects and causes constipation than the opposite.

In considering indigestion, then, in different animals, it is necessary to bear in mind these variations: whereas in man indigestible substances passing from the stomach to the intestines causes diarrhoea, in the horse we have constipation. The ease with which the dog vomits saves him from either, save under great provocation; but this violent action of the stomach is apt to weaken the organ. In ruminants the stomachs, especially the first, are most apt to become deranged.

Simple indigestion exists in animals that void large quantities of food unchanged; with this there is a capricious appetite, a harsh skin, staring coat, and general unthriftiness.

In a horse whose dung contains a quantity of unaltered oats, if the teeth are all right, crushing the food will make a decided improvement. The outer envelope of all seeds is very indestructible, and, if not ruptured, resists the action of the gastric juice.

Another disease there is in which the food is passed out undigested, but dependent on a different cause—I refer to what is known as “white scour”—diarrhoea of calves brought up by hand on milk. The young animals, instead of getting their food in small quantities, and often, have too long a fast, and then too much milk; the result is, the stomach, after curdling the milk, is not able to digest the curds, which act as irritants, and set up diarrhoea.

Though a little chalk mixture may be necessary at first, we must pay most attention to prevention. Let food be given at regular and short intervals: a tablespoonful of chopped rennet assists digestion; we may also combine with the milk a little baked flour, or the ready-made food sold as “Dr. Ridges.”

Diarrhoea caused by indigestible matter in the intestines is nature's method of cure. So long as this is not too violent, it should be rather favoured than checked.

Homœopathy.

THE PHARMACOPŒIA.

WE learn from the preface to this work, which is subscribed by F. F. QUIN, M.D., President of the British Homœopathic Society, and H. R. MADDEN, M.D., Convener of the Pharmacopœia Committee, that between 1834 and 1855 there appeared seven works, which have been in turn regarded as more or less authoritative by homœopathic physicians and chemists. Since 1855 no book has been published to replace either of these. It will therefore be evident that something was required which should be taken as a standard, if for no other reason than that so many other quasi-official books were already in existence. The publication of the British Pharmacopœia, in which the similar works of the three kingdoms were fused into one, was probably the occurrence which decided the Society to bring out a Pharmacopœia of their own. The existence of the British Pharmacopœia, too, which for works of that character is now generally admitted to be a model, gave great assistance in the compilation of its homœopathic prototype—assistance which its editor has freely acknowledged. No one, however, can read through this book without observing, that while in a general sense the British Pharmacopœia has been taken as a model, it has not been by any means a mere adaptation of that volume. After very carefully examining its pages, we are convinced that a most conscientious endeavour has been made to place homœopathic pharmacy clearly before the reader. As a literary production, this has been accomplished in a most concise and systematic manner. Only those actually engaged in the practice, however, will be able to discover the imperfections or omissions which may exist. There are some points of ingenuity, by means of which the preparations used by homœopaths have been rendered uniform in strength, and certain hard and fast lines have of necessity been drawn so as to ensure the exact comprehension of the meaning of the prescriber, when he denominates by figures the attenuations he wishes to give; and this will undoubtedly give great satisfaction, as the confusion between the decimal and the centesimal systems was a growing and troublesome evil to all concerned. A chief feature of this work, and evidently the object which its compilers have steadily kept in view, is the perfection of an arithmetical proportion of strength in all the preparations. In one respect only, but this a very important one, has that system been departed from. It occurs in the denomination of tinctures. A great amount of ingenious calculation has been expended, the result of

which is given in a series of tables, whereby a uniform strength of tincture is at all times ensured, that strength being in the proportion of 1 to 10. This idea has been carried out, with but very few exceptions, and the use of the tables is to be a guide, so that a greater or less degree of moisture existing in the crude material shall never give variable results; it being necessary, in properly preparing homœopathic tinctures, first to ascertain the amount of moisture in a given quantity of material, and to reckon this moisture as so much menstruum. The same proportion of moisture is also to be considered in arranging the strength of spirit used. Thus, therefore, it will be seen that a mother tincture exactly corresponds to the first trituration of any substances. This, therefore, presented an opportunity to strike an exact level with all the homœopathic preparations, simply by abolishing the word mother tincture, and substituting for it, as in the case of the triturations, the description—Tinct. 1 x. As we gathered from Dr. Madden's recent address, this plan was recognised and advocated, but the prejudice in favour of the original definition overcame the suggested reform for the present. This is not of such great consequence, as the next dilution will be designated 1 (that is, centesimal), and will therefore correspond with the trituration 1—the centesimal being always understood unless the decimal is expressly ordered. We have dwelt at some length on this point, in order to take the opportunity of expressing an opinion, in which we believe many homœopaths will tacitly concur, namely, that although for the present the centesimal system may have technically won the day, the time will soon come when this will be changed, and the decimal will be the adopted scale. In that case we may expect to see the alteration of definition which we have indicated. It seems to us that the drift of homœopathy is towards the abandonment of infinitesimal doses and ideas of dynamization, and towards a more general reliance on the principle of “*similia similibus curantur*” only.

The Pharmacopœia is divided into three parts, a supplement, and a very copious index. The first part gives the general directions for making the various kinds of preparations; these directions, not being repeated, as in our Pharmacopœia, in each individual instance. The second part is an alphabetical arrangement of the materia medica, under each heading being grouped in a very concise manner all references and descriptions, tests, etc., necessary. The proper forms for dispensing are in all cases added, an advantage which will be much appreciated, impossible preparations being now not unfrequently ordered by medical men, and still more often asked for by the public. The Pharmacopœia will therefore provide an anchor for the chemist in such cases. The third part is a list of external remedies, which is short and unsatisfactory. For instance, we looked for Arnica Opodeldoc; and though we should not have been surprised not to have found it at all, for there must be some limit even to a Pharmacopœia, we certainly were surprised to find the following vague description given under the head of opodeldoc after a form for a general basis, which consists of curd soap, rectified spirit, and water. “Dissolve the soap in the water by a gentle heat, then add very gradually the rectified spirit, and the medicine (*in the proportion determined upon*). . . . Arnica and Rhus are the chief medicines used in this form.” This does not come up to our idea of Pharmacopœial accuracy. We have next a long table, giving the Latin and English names (the former accentuated), with the doses, duration of action, and antidotes to all the medicines.

The supplement gives particulars of a large number of medicines not in general use, and of the homœopathic action

of which little is known. We must confess to the hope that at least one of these medicines, *Cimex Lectularius*, may long remain in the supplement only.

CONTAMINATION.

The following appears in the *Homœopathic Review* for June, and refers to Mr. Ross's letter in our columns last month. The writer evidently misunderstands our correspondent, who expressly refers to the medicines themselves, and not to the solutions or triturations. Besides, camphor is not a law of matter:—

Gentlemen;—In a letter published in the *CHEMIST AND DRUGGIST* of this month, Mr. Ross asserts that "medicines homœopathically prepared above the third potency are not amenable to the laws of matter." Why not? To what laws do they become amenable? Are we to infer from this that mere. sol. 6 cannot be injured by the chemical power of the solar rays, or that aconite 6 is removed beyond the contaminating influence of camphor? This is a new feature in homœopathic pharmacy, one which requires further elucidation.

I am, Gentlemen, yours truly,

JOHN TIRRELL.

Hanley, May 17, 1870.

PROGRESS IN AMERICA.

We learn from the *Evening Albany Journal* (New York), of May 5th, 1870, some interesting particulars respecting appropriations to homœopathic institutions. By this authority we are told that one of the last acts of the Legislature, at its recent session, was the passage of a law appropriating 150,000 dollars for a State Lunatic Asylum, to be located at Middletown, Orange County. The Institution is to be known as the State Homœopathic Asylum for the Insane, and is to be conducted upon the homœopathic system of therapeutics. The charge for treatment is to be sufficient to defray the expenses of the asylum. The Comptroller is authorized by the Act to pay the sum appropriated, when he is satisfied that an equal amount has been secured by public subscriptions.

Another law was also passed, authorizing the New York Sinking Fund Commissioners to lease, for four hundred years, suitable grounds near Central Park, in the city of New York, for the Hahnemann Hospital. The terms of the lease provide for a nominal rental of twelve dollars a year (one dollar per lot), so long as the building is used solely for the purposes indicated in the Act. An appropriation of 20,000 dollars was made towards a building fund.

The representative status of the adherents of homœopathy in their society organizations in this State is very nearly equal to that of the allopathic school; and as they pay a fair proportion, one-third to one-half the taxes, it is proper that they should receive a proportionate amount of the appropriations for the support of State medical institutions; accordingly we find that the 200,000 dollars voted this year to homœopathic organizations is nearly one-third of the total amount appropriated.

During the past thirty years the State Government has disbursed many millions for the support of allopathic medical enterprises. This, the first apportionment to State institutions under homœopathic auspices, may be succeeded by the establishment of others of a like character, until the number shall equal those at present under allopathic direction.

Dentistry.

NITROUS OXIDE.

PROTOXIDE of nitrogen has become so securely established as a most successful anæsthetic, and its usefulness, especially in dental operations, is so universally recognised, that there seems to have sprung up a large trade for the supply of apparatus for making the gas, or more gene-

rally now for the supply of the gas itself in a condensed form. Two firms, Mr. George Barth, of Duke-street, Bloomsbury, and Messrs. Coxeter and Son, of Grafton-street, supply this, and their inventions are both of considerable interest and importance. Mr. Barth supplies the gas in iron bottles, the exact fluid capacity of which we do not know, but being apparently about half a gallon, and these contain fifteen gallons of the compressed gas. Messrs. Coxeters' bottles, which do not appear to be so large, contain the gas in a liquid form, and, therefore, in a much more condensed state. These hold 100 gallons of the gas. Messrs. Coxeters' apparatus for inhaling the gas is by admitting it from the bottle into a Cattlin's bag, and thence through tubes with valves, and a mouth-piece, or face-piece. Mr. Barth has a gasometer, which is readily filled from the bottle; and a special advantage which he claims for this apparatus is its perfect cleanliness, as it is more difficult to clean or ventilate an air-tight india-rubber bag. At the upper part of this gasometer an adaptation of Mr. Coleman's economising process is arranged, by the use of which the air which is breathed back during the process of inhalation is returned to the gasometer, after being freed from carbonic acid gas by means of a solution of caustic potash. In Messrs. Coxeters' apparatus, Coleman's process is also generally adopted, apertures being provided for small lumps of lime. Mr. Coleman's process saves gas in anæsthetical operations to the extent of about fifty per cent., a quantity of six or seven quarts being sufficient when his process is adopted. The cost of this quantity of gas is from fivepence to sixpence. In his pamphlet, Mr. Barth thus describes the manner of administration:—

"A patient is seated, the mouth examined, a small piece of vulcanite or wood placed betwixt the jaws to give facility for easily grasping an offending tooth, the gas is inhaled; in from 50 to 90 seconds, as a rule, the patient is totally insensible to pain, the tooth, teeth, or stumps are extracted; within two minutes the patient is wide awake and smiling, and quite ready and willing to take more gas and lose another tooth if it be necessary, and able to walk away as if nothing unusual had occurred."

It will, we think, soon become essential that everyone practising dentistry must be prepared to offer his patients their choice of pain or painlessness.

THE NEW MEDICAL ACT AND TOOTH-DRAWING.

TO THE EDITOR OF THE "CHEMIST AND DRUGGIST."

SIR,—As you are doubtless aware, many of your readers find it necessary to practise dentistry in addition to their other avocations. Many do so to a very considerable extent, and a more appropriate addition to a small dispensing business it would be difficult to find. But we shall not do so much longer unless you lend us the aid of your powerful pen to resist a clause in the new medical bill, which, I believe, is to be brought before Parliament either this or next session. By it "anyone without a legal qualification operating or performing any surgical operation whatever, with the object of gain, will be prosecuted, with heavy penalties to follow if convicted, unless registered." This being the case, no dentist or chemist, if not holding a diploma, may not extract a tooth, although many medical men object to perform that simple operation, and the majority of them dislike having anything to do with dentistry, except receiving commission for their disinterested recommendation. The *Dental Journal* is taking the matter up on behalf of the so-called "Pure Dentists," who hope to exclude all chemists from even being allowed to pass a modified examination. I think some amongst us will find it rather hard times if we are to be so edged round with restrictions; for what with co-

operative stores dispensing, and grocers cutting down the price of articles first introduced by us, instead of the old tale about elevenpence-halfpenny in the shilling, we shall have to content ourselves with the odd halfpenny. I expect to hear one of these days that the veterinary surgeons are applying for an Act to prevent our country brethren from recommending a physic ball or a cleansing drench. I must say, I think we are having a trifle too much law; unless you assist and we resist, we shall find that we have nothing on which to subsist, consequently shall cease to exist.

June 11th, 1870.

A CHEMIST AND DENTIST.

Photography.

IN the demand for *cartes-de-visite*, all other popular favourites have given way, for the time, to the portrait of Charles Dickens. That now sold by the Stereoscopic Company, the most recent taken of the great novelist, is both excellent as a picture and strikingly faithful as a likeness.



COFFEY'S APPARATUS.

MR. JOHN A. COFFEY, whose many important inventions are well known to practical chemists, has made a remarkable discovery with relation to the application of heat, and has already adapted it to laboratory purposes, while he is also engaged in the application of the same principles to almost every other process or manufacture where heat is requisite. The invention is based on the discovery of a sort of paraffin oil, which in closed tubes can be heated to 1,100° Fahr. The regulation of the temperature is under perfect control, and it can be applied in just the same way as steam or hot water pipes now convey the heat, only at a much higher degree, and with more safety. The specific heat of the oil being twice as great as that of water, a considerable economy of fuel is effected, and another advantage is, that with this apparatus, earthenware vessels can be used without danger, thus saving the expense of platinum in many laboratory operations.

CHLORAL PERLÉ, LIMOUSIN.

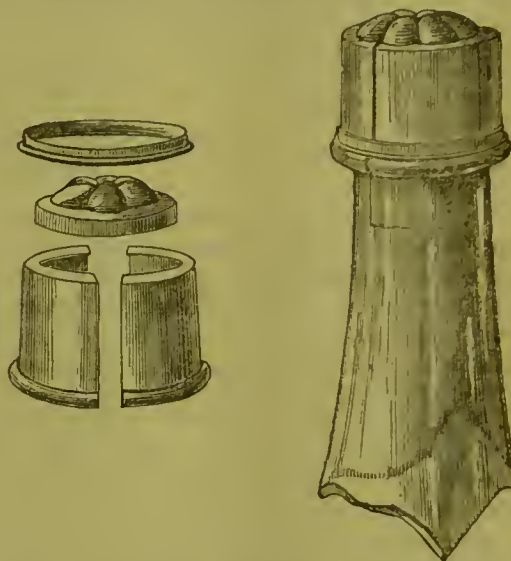
IN our correspondence from Paris last month mention was made of Limousin's chloral capsules, which had become a popular form for the administration of the medicine among the Parisian physicians. Since then M. Limousin has sent us a sample of the capsules. Each contains 33 centigrammes of crystallised chloral hydrate, which certainly appears to be of perfect purity. M. Limousin claims that in the solid state chloral is much more certain in its effects than in solution. By taking these capsules the dose can be exactly regulated.

WHITBY'S HAIR BRUSH RENOVATOR.

A NEW article under the above name is put up for sale in sixpenny and shilling boxes by Mr. J. H. Whitby (successor to R. B. Ede and Co.) It answers its purpose excellently, and will doubtless give satisfaction wherever it is sold.

CAPSULE HERMETIQUE.

THIS is the French title of an invention which has been submitted to us by M. Jules Becker, of No. 97, Champs Elysées, Paris. The object of it is to secure champagne from ullaging, and for the more speedy removal of the cork, the old system of wax, wire, and string being entirely obviated. The annexed drawing will explain the system. It consists of a metal capsule and two hemispheres with flanges which clip the rim at the neck of the bottle as well as the capsule, thus keeping the cork in its place; a ring pressed down over the hemispheres secures



the whole. To release the cork, it is only necessary to place the thumb on the top of the capsule and raise the ring with the forefinger; the hemispheres then are disengaged, and the cork, with the least possible pressure, is removed. M. Becker's invention is being extensively adopted for mineral waters, as well as for champagne, ales, &c. Among others, we may mention that the Vichy Waters Company have shown their approval by making a large contract for the supply of these novel, convenient, and economical capsules.

MANBRE'S GRAPE SUGAR.

A DESCRIPTION of the glucose manufactory of Mr. Manbre appeared in the CHEMIST AND DRUGGIST for July, 1869. The glucose which we then saw was manufactured and sold by the ton as a substitute for malt in brewing. The article now before us, manufactured by the same firm, is specially prepared for domestic use as a diet. It is sold in 1 lb. and 2 lb. boxes, and is recommended for all purposes where cane sugar is employed, especially for invalids who are not able to take the latter on account of its producing acidity. It is impossible for a chemist not to be pleased with Mr. Manbre's beautiful preparation, which, a few years ago, was a chemical curiosity, and is now produced in immense quantities for many economical purposes. We think the medical profession will be likely to recommend Mr. Manbre's grape sugar in many cases when they are acquainted with it.

PERFUMED CARBOLIC ACID.

UNDER the direction of Messrs. Calvert and Co., of Manchester, whose preparation alone is used, Mr. Mason, of Preston, has introduced a perfumed solution of carbolic acid. To produce from carbolic acid a handkerchief per-

fume is a rather bold idea, but it will be acknowledged that this article is very refreshing, especially in the hot weather. It makes an excellent and pleasant mouth wash, and if regularly used would certainly to a great extent preserve the teeth from decay.

HYDROGEN LAMP.

ALTHOUGH not a novelty to some chemists who remember it in their youth, Doberiner's Hydrogen Lamp, which we show in the accompanying sketch, will perhaps be new to many readers, as it has been but little seen or heard of for the last dozen or twenty years. Messrs. Mottershead and Co., of Manchester, are just now importing a large number from France, and have called our attention to them. We therefore gladly take the opportunity thus offered of referring to them. A glass bell of air is connected with the cover of the vessel, which is also of glass, and which contains water acidulated with sulphuric acid. The cover



being attached, the bell becomes surrounded by water, which rises in it when the air is allowed to escape. This is affected by pressing down the small lever (c) at the top. In the bell a piece of zinc (B) is suspended, which decomposes the water when it is reached, and thus in a few minutes hydrogen gas has taken the place of air in the bell. The lever being now pressed down, the hydrogen is forced on to a piece of spongy platinum in a cage (D), which, becoming red-hot, inflames the gas, and by the same movement the wick of the lamp is brought into the current and instantly lighted. A is a protecting shield for the platinum. Besides being an ingenious chemical toy, this lamp is of real service. In a sick room it is especially useful, as by its means a light can be obtained certainly and instantly, and what is often of some importance, without any noise.

METALLIC SHOW-CARDS.

SEVERAL specimens of the metallic show-cards of Max Cremnitz, of Paris, have been brought under our notice by his London agent, Mr. G. Marshall, of 36, St. Mary-at-Hill. The advantages of metal over cardboard are of course durability and washability, but in the cards of this manufacture we have also a permanently clear background, a feature which in metal has not been attained before, but which adds much to the effect of the designs. We are not surprised to learn that many of our largest advertising firms are adopting these cards.

NEW SODA-WATER MACHINE.

MESSRS. HAYWARD TYLER and Co., of Whitecross Street, London, have brought out a machine made on exactly the same principles as their larger ones, but suited only to the requirements of a small trade. It is capable of making forty dozens *per diem*, and is so arranged, that the case in which it is packed forms a stand for the machine when in use. This feature makes it very convenient for military messes, and other occasions, when it is important to be able to move the machine about from place to place. Although it is brought out at a low price, there is in all its parts the best workmanship and materials, as is always the case with the manufactures of this firm.

SAVAGE'S LABEL DAMPER.

WE have received a specimen of this little counter apparatus from the makers, Messrs. Savago and Son, Brighton. The advantage which it seems to possess over those now generally used is in the possession of a spring cover to press down on the labels when they are laid on the damp pad. Something of this sort is decidedly superior to the rough-and-ready natural process of wetting labels, and the damper now before us is an improvement on those we have hitherto been accustomed to.

Corner for Students.

CONDUCTED BY RICHARD J. MOSS.

The chemical formulæ employed in this section are based upon the new system of atomic weights, unless the use of the older system is specially indicated. In the *British Pharmacopæia* the symbols corresponding to those adopted here are printed in heavy Clarendon type. The new editions of Fownes's *Manual of Chemistry*, and Atfield's *Chemistry: General, Medical, and Pharmaceutical*, supply the data required for calculations, and are recommended as text-books.

QUESTIONS.

First Division.

I. ORGANIC ANALYSIS.—Calculate the formula of a sugar the analysis of which gave the following results:—

	Grammes.
Quantity of sugar employed	6175
Potassium hydrate apparatus before absorption	
of CO ₂	100.5970
Potassium hydrate apparatus after absorption	
of CO ₂	101.5470
Calcium chloride tube before absorption of H ₂ O	29.0290
Calcium chloride tube after absorption of H ₂ O	29.3865

II. OPIUM.—Mention some tests that may be applied to a liquid supposed to contain some preparation of opium, with a view to the detection of this substance.

III. NITRO-CELLULOSE.—Describe the preparation and properties of the nitro-cellulose compounds produced by the action of nitric acid of various strengths on cotton wool.

IV. PHOSPHORIC ACID.—Describe the principal properties of the three varieties of this acid, and their salts; and state how they may be detected in solution.

V. SPECIFIC GRAVITY.—A liquid having a sp. gr. of 1.37 is mixed with three times its volume of another liquid, the sp. gr. of which is 1.65; what is the sp. gr. of the mixture, assuming that it is purely mechanical?

Second Division.

I. POTASSÆ PERMANGANAS, B.P.—Explain the officinal process for the preparation of this substance, and represent the reactions symbolically.

II. MERCURY.—If the product for the officinal process for the preparation of hydrargyri sulphas, B.P., is employed in the preparation of hydrargyri perchloridum, B.P., how many ounces of the latter substance should be produced?

III. GAS FLAME.—Describe the non-luminous flame of a Bunsen's gas lamp, and give an account of the properties possessed by the different parts of it.

IV. TERMS.—Explain the terms diffusion, occlusion, and effusion, as applied to gases.

V. SPECIFIC GRAVITY.—A raft is constructed out of ten pieces of wood, the sp. gr. of which is .47, each piece measures 10 feet in length, 1 foot in breadth, and 6 inches in thickness. What weight, in pounds, is it capable of carrying if floated in fresh water, and what weight if floated in salt water, sp. gr. 1.027? (1 cubic foot of water weighs 62.32 pounds).

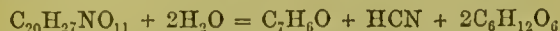
ANSWERS.

First Division.

I. ALMONDS.—The principal constituents of both sweet and bitter almonds are, fixed oil, emulsin or synaptase, uncrystallisable sugar, and gum. In addition to these sub-

stances, bitter almonds contain a peculiar principle called *amygdalin*. In contact with water and emulsin, which acts as a ferment, this substance is decomposed, and essential oil of bitter almonds (benzoic aldehyde) hydrocyanic acid—to which substances the characteristic odour is due—and glucose are produced.

The decomposition is represented by the equation—



II. MINERAL WATERS.—Chalybeate waters are those that contain iron in quantities sufficient to confer upon them peculiar medicinal properties. The iron is usually found either as sulphate, or carbonate with free carbonic acid. Its presence is indicated by a peculiar inky taste, and the production of a blue precipitate on the addition of potassium ferrocyanide to a portion of the water, previously boiled with a little nitric acid.

Saline waters are distinguished from other mineral waters by the large amount of salts that they contain. When evaporated to dryness they leave a considerable residue, which is usually found to consist of the metals, potassium, sodium, magnesium, and calcium, in various proportions, and in combination with sulphuric, hydrochloric, and carbonic acids; large quantities of the latter in a free state are also frequently present. Calcium may be recognised by its giving a precipitate with ammonium oxalate, insoluble in acetic acid. Magnesium gives a crystalline precipitate on the addition of ammonium chloride, ammonia, and sodium phosphate. Sodium and potassium may be sought for by introducing a portion of the residue obtained by evaporation into the blowpipe flame, to which the former imparts an intense yellow colour, and the latter a violet colour. If a large quantity of sodium is present, the flame should be examined through a deep blue cobalt glass, which intercepts the sodium rays, but transmits those peculiar to potassium. Sulphuric acid, if present, should give a precipitate with barium chloride, insoluble in dilute acids. Hydrochloric acid gives a precipitate with silver nitrate, soluble in ammonia, but insoluble in acid; and carbonic acid gives a precipitate with a solution of calcium hydrate.

Sulphurous waters are characterised by their offensive odour, due to the presence of hydrogen monosulphide, which is recognised by its blackening silver or producing a black precipitate with salts of lead. If after the water has been boiled it no longer precipitates lead salts, the gas must have been in a free state, but if it continues to give this reaction, it must have been in a state of combination.

III. QUALITATIVE ANALYSIS.—If the substance be a sulphide, on heating it with sulphuric acid hydrogen monosulphide should be evolved, and is easily recognised by its disagreeable odour. If it be a chloride, hydrochloric acid, which fumes in contact with ammonia, should be liberated. When an iodide is heated with sulphuric acid, violet vapours of iodine are evolved; they give a blue colour with starch paste. When a bromide is thus heated, red vapours of bromine, which colour starch paste orange, are given off. When a chlorate is treated with sulphuric acid, a greenish-yellow coloured explosive gas (chlorine teloxide, Cl_2O_4) is evolved. An oxalate heated with sulphuric acid is decomposed with the production of carbon monoxide and carbon dioxide; the former gas burns with a blue flame, and the latter gives a precipitate with a solution of calcium hydrate.

IV. ARSENICUM.—The following are some of the more important reactions by which arsenicum may be distinguished from antimony:—

If a few pieces of zinc be heated with a strong solution of potassium hydrate, so that hydrogen is evolved, and a small quantity of an arsenical solution be added to the mixture, arseniuretted hydrogen will be given off, and may be recognised by its producing a purple black spot on a piece of paper moistened with a solution of silver nitrate, and exposed to the evolved gas. Antimoniuretted hydrogen cannot be obtained by this method; but if sulphuric acid be substituted for the potassium hydrate, as in Marsh's test, either arseniuretted hydrogen, or antimoniuuretted hydrogen can be obtained; and if a cold surface be exposed to a burning jet of the evolved gas, a metallic spot will be produced.

The arsenicum spot dissolves quickly in a solution of soda chloride, but the antimony spot is insoluble.

If a burning jet of hydrogen containing these gases be allowed to impinge on the inside of a beaker for a few minutes, a white deposit will be obtained; that produced by arsenicum is soluble in water, but the antimony deposit is insoluble.

If a hard glass tube through which these gases are passed, is heated, the metals are deposited as mirrors. When an arsenicum deposit is submitted to a cement of hydrogen monosulphide, and gently heated, a yellow sublimate is produced; an antimony deposit with similar treatment gives an orange, and less volatile sublimate. If a current of dry hydrochloric acid is passed through the tubes containing these sublimates, the arsenical one remains unaltered, while the antimonial deposit disappears completely. In this test a yellow sublimate of sulphur is liable to be produced, and may be mistaken for arsenicum sulphide; but the solubility of the latter substance in ammonia affords an easy method for distinguishing the two sublimates. When arseniuretted hydrogen is passed through a solution of silver nitrate, metallic silver is precipitated, and arsenious acid remains in solution. When antimoniuuretted hydrogen is thus heated, the antimony is entirely precipitated in combination with silver.

V. BORACIC ACID.—Boracic acid, or orthoboracic acid (H_3BO_3), is best obtained on the small scale by adding to a boiling concentrated solution of borax, concentrated sulphuric, or hydrochloric acid, until the liquid strongly reddens litmus; on cooling, the greater part of the acid separates from the solution in pearly looking scales. Boracic acid is sparingly soluble in cold water, but is dissolved by three times its weight of boiling water. Its solution imparts a claret colour to litmus paper, and turns turmeric paper a reddish brown. It dissolves in alcohol, and this solution burns with a beautiful green-edged flame. On evaporating an alcoholic or aqueous solution of the acid, a portion of it volatilises with the vapour of the liquids, although it is not itself volatilised by heat. At a temperature of 100° , the acid loses water, and is converted into metaboracic acid (HBO_2), and at a red heat into boracic anhydride (B_2O_3). The boracic radical is trivalent, and the metaboracic univalent. The borates are not decomposed on ignition, they are colourless, and they all, even the salts that contain an excess of acid, manifest alkaline reactions with test-paper. With the exception of the alkali salts, they are all almost totally insoluble in water, but they dissolve readily in acids, and in water containing ammonium salts.

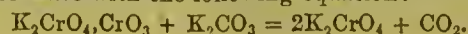
To detect a borate in solution, hydrochloric acid should be added to slight but distinct acid reaction, a slip of turmeric paper half dipped into the solution, and then dried at 100°C . If a borate is present the turmeric paper will have acquired a peculiar red tint; this colour is changed by the addition of an alkali to a bluish-black or greenish-black, but is restored again by the addition of a little hydrochloric acid.

Second Division.

I. INFUSUM CALUMBÆ, B.P.—The bitter principle of columba root, which has been named *columbin*, is soluble in cold water; and starch, which enters largely into the constitution of the root, is soluble in boiling water, but insoluble in cold water; the latter is employed in order that an infusion free from starch may be obtained.

II. ARSENICUM.—To ascertain whether the colouring matter is arsenical or not, it may be dissolved in hydrochloric acid, and this solution poured into a vessel in which hydrogen is being generated by the action of dilute sulphuric acid on zinc. The gas evolved should be conducted from the vessel by a suitable tube and ignited. On holding a porcelain plate by this flame for a short time a black deposit of arsenicum, soluble in a solution of soda chloride, should be obtained, if the substance under examination was arsenical.

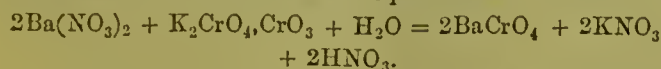
III. POTASSIUM CHROMATES.—The yellow potassium chromate may be obtained from the red salt by adding potassium carbonate in small quantities at a time, to a hot solution of the red chromate until effervescence ceases. The reaction is in accordance with the following equation:—



When potassium chromate is added to a solution of barium nitrate, the barium is precipitated as chromate, and potassium nitrate remains in solution, thus:—



When potassium bichromate is added to a solution of barium nitrate, barium chromate is produced but is not all precipitated, some of it being dissolved by the nitric acid liberated in accordance with the equation:—



IV. ABSORPTION OF GASES.—Gases moderately soluble in water follow in their solubility the law of Henry and Dalton, according to which the quantity of gas dissolved is directly proportional to the pressure. Gases which are exceedingly soluble in water do not obey this law, except at higher temperatures, when the solubility has been already considerably diminished. The pressure which determines the rate of absorption of a gas is not the general pressure to which the absorbing liquid is exposed, but that pressure which the gas under consideration would exert if it were alone present in the space with which the absorbing liquid is in contact.

V. SPECIFIC GRAVITY.—The tank is capable of holding 54·946 pounds of liquor potassæ, *B.P.*, and this quantity of potassium hydrate solution is capable of neutralising 6·577 pounds of hydrochloric acid, 5·157 pounds of nitric acid, and 2·9 pounds of sulphuric acid.

The given measurements multiplied together give the capacity of the tank, $18 \times 10 \times 8 = 1440$ cubic inches, or $\left(\frac{1440}{277 \cdot 274}\right) = 5 \cdot 1934$ gallons; but one gallon of water weighs 10 pounds, therefore the tank holds 51·934 pounds of water, and as the sp. gr. of liquor potassæ, *B.P.* is 1·058, the weight of the solution that the tank is capable of holding must be $(51 \cdot 934 \times 1 \cdot 058) = 54 \cdot 946$ pounds, of which 5·84 per cent. is potassium hydrate, or $\left(\frac{54 \cdot 946 \times 5 \cdot 84}{100}\right) = 3 \cdot 2088$ pounds.

The quantity of hydrochloric acid to which this is equal is found by the following proportion, the molecular weight of potassium hydrate being 56, and that of the acid 36·5,

$$56 : 3 \cdot 2088 = 36 \cdot 5 : x \therefore x = 2 \cdot 0915.$$

As the official acid contains 31·8 per cent. of real acid, the quantity of it, which would contain 2·0915 pounds of real acid, is found by the proportion

$$31 \cdot 8 : 2 \cdot 0915 = 100 : x \therefore x = 6 \cdot 577.$$

The weights of nitric and sulphuric acid are ascertained in a similar manner, bearing in mind that for the neutralisation of one molecule of sulphuric acid two molecules of potassium hydrate are required.

PRIZES.

The First Prize for the best answers to the questions of the First Division published in our May number has been awarded to

A. C. MAYBURY (Otho), 41, Sloane-square, S.W., to whom a prize of equal value was awarded in April.

The Second Prize for the best answers to the questions of the Second Division has been awarded to

JAMES RIGBY, Mrs. Barber's, 51, Great George-street, Liverpool.

Marks awarded for Answers.

First Division.

	I.	II.	III.	IV.	V.	E.	Total.
Otho (1st prize)	6	8	6	7	6	3	36
B. P.	6	8	6	7	5	3	35
Albertus	6	7	6	7	5	3	34
J. W.	6	7	6	7	5	3	34
J. C. T.	6	6	6	7	5	3	33
A. Fraser	6	7	6	5	5	3	32
J. S. E.	6	6	6	6	5	3	32
F. C. Treadgold	6	8	5	6	5	2	32
J. Young	6	7	6	5	5	3	32
A. B. Fletcher	6	6	6	6	4	3	31
H. Forster	5	6	6	6	3	3	29
D. Meldrum	6	7	4	5	5	2	29
J. K.	6	6	4	6	4	2	28

J. H. Watson	6	7	5	2	5	3	28
W. Maddock	6	3	6	6	4	2	27
N. B. R.	4	6	6	5	4	2	27
J. C. C.	5	6	6	4	4	0	25
C. B.	6	5	3	4	4	2	24
A. Pierce	5	7	3	4	4	1	24
J. W. Smith	5	4	6	4	3	2	24
W. Greig	6	4	1	6	4	2	23
J. W. Marley	3	4	3	6	5	2	23
W. Antony	3	7	4	3	3	1	21
Sphero Optima	6	7	0	2	5	1	21
S. H.	5	6	5	1	2	2	21
R. T.	5	6	4	1	2	1	19

Second Division.

	I.	II.	III.	IV.	V.	E.	Total.
J. Rigby (2nd prize)	4	5	5	4	4	3	25
Ephemera	4	4	1	6	8	1	24
P. L.	4	4	5	2	7	2	24
J. Edgill	4	5	5	6	1	2	23
Iota	4	4	4	3	6	2	23
J. S.	4	4	3	5	5	2	23
F. W. Fletcher	4	5	2	6	3	2	22
H. B. W.	4	6	3	3	4	2	22
A. Weddell	4	5	2	2	5	3	21
W. J. Croghan	4	5	3	2	3	3	20
S. T. Severs	4	4	3	2	5	1	19
R. L.	4	1	1	2	7	2	17
W. Laugher	4	1	1	0	1	2	9
H. W. N.	3	0	2	0	0	1	6

TO CORRESPONDENTS.

* * All questions forwarded to us for publication in this "Corner for Students" should be accompanied by the answers which the propounders believe to be correct. Communications should include the names and addresses of the writers; those which reach us after the first day of the month will be disregarded.

Prizes.—The students to whom prizes are awarded, are requested to write at once to the publisher, naming the book they select, and stating how they wish it forwarded.

J. S. E.—II. Calcium oxalate dissolves readily in hydrochloric acid, but not in acetic acid.

H. Forster.—I. Error in formula for benzoic aldehyde. V. The formula which you gave for boracic acid was that of metaboracic acid.

W. Maddock.—II. The negative results alluded to are valueless, for by them saline waters could not be distinguished from pure water.

N. B. R.—I. Amygdalin is only slightly soluble in water and alcohol. The odour of the emulsion of bitter almonds is not entirely due to hydrocyanic acid; bitter almond oil possesses a peculiar and very agreeable odour. The compound in Nessler's solution is represented by the formula K_2HgI_4 .

W. Antony.—II. The quantity of iron that could exist as oxide in a mineral water is exceedingly small.

S. H.—No student can in the same month compete in both divisions.

J. Rigby.—V. The neutralisation of sulphuric acid with potassium hydrate would result in the production of a neutral salt, and not an acid one, as represented in your reaction.

Ephemera.—III. The product of your method would be a double chromate of potassium and ammonium. V. The only fault with this solution was its length.

J. Edgill.—V. This question did not refer to the dilute acids.

A. Weddell.—III. If you try the experiment, you will find that a precipitate is produced with the red salt. To ensure uniformity, we always employ the equivalents given in the Pharmacopœia.

S. T. Severs.—IV. Your answer would be tolerably correct if all gases were equally soluble in water.

W. Laugher.—IV. You do not refer to the relation alluded to in the question.

H. W. N.—V. You must have worked out your solution to this problem very thoughtlessly; all the information required is given in the Pharmacopœia.

H. Dunn.—Having obtained a prize, you cannot again compete in the second division.

Alpha.—Your answers reached us on June 6th, nearly a week after the date on which we require them to be sent in.

Books offered as First Prizes.

- Attfield's *Chemistry: General, Medical, and Pharmaceutical.* (Van Voorst.)
 Brooke's *Elements of Natural Philosophy.* (Churchill.)
 Conington's *Handbook of Chemical Analysis;* with Tables of Qualitative Analysis adapted to the same. (Longmans.)
 Elliot and Storer's *Manual of Inorganic Chemistry.* (Van Voorst.)
 Fownes's *Manual of Elementary Chemistry.* (Churchill.)
 Fresenius's *Qualitative Analysis.* (Churchill.)
 Galloway's *Qualitative Analysis.* (Churchill.)
 Ganot and Atkinson's *Elementary Treatise on Physics.* (Longmans.)
 Garrod's *Materia Medica;* with Modern Chemical Notation. (Waltou.)
 Noad's *Chemical Analysis, Qualitative and Quantitative.* (Reeve.)
 Northcote and Church's *Qualitative Analysis.* (Van Voorst.)
 Odling's *Outlines of Chemistry.* (Longmans.)
 Royle and Headland's *Materia Medica.* (Churchill.)
 Williamson's *Chemistry for Students.* (Clarendon Press.)
 Barff's *Introduction to Scientific Chemistry.* (Groombridge.)

[Any other scientific book that is published at a price not exceeding half-a-guinea may be taken as a first prize.]

Books offered as Second Prizes.

Bloxam's *Laboratory Teaching*. (Churchill.)
 Church's *Guide for Students in Agricultural Chemistry*. (Van Voorst.)
 Galloway's *First Step in Chemistry*. (Churchill.)
 Gill's *Chemistry for Schools*. (Walton.)
 Hofmann's *Introduction to Modern Chemistry*. (Walton.)
 Huxley's *Lessons in Elementary Physiology*. (Macmillan.)
 Oliver's *Lessons in Elementary Botany*. (Macmillan.)
 Orm's *Introduction to the Science of Heat*. (Groombridge.)
 Potts's *Elements of Euclid*. School Edition. (Longmans.)
 Roscoe's *Lessons in Elementary Chemistry*. (Macmillan.)
 Wormald's *Elementary Course of Mechanics*. (Groombridge.)
 Wurtz's *History of Chemical Theory*. Translated by Watts. (Macmillan.)
 [Any other scientific book which is sold for about five shillings may be taken as a second prize.]



LONDON CHEMISTS' ASSOCIATION.

On Thursday, April 28th, Mr. Pickering being in the chair, a paper was read by Mr. G. BROWNEN on

THE WATERS OF THE PHARMACOPEIA.

He commenced by some general remarks on this class of preparations, and called attention to the minuteness of the Pharmacopœia directions for making them in some instances, and the want of such in others, as in camphor, dill, and mint waters.

He first noticed simple distilled water, which he showed was water freed from its mineral matters only; its gaseous impurities, its strong solvent power on metals, etc., were pointed out, and he gave a lengthy and elaborate argument or thesis to show that the action of water on volatile oils was to etherify and hydrate them, by which action was produced the "mellowness" of old distilled waters. Each of the Pharmacopœia waters was noticed in turn, with the proportions of the oils used for making them, which, in some cases, he said, were greatly in excess. He gave the specific gravities of the different oils, etc. In noticing the modes of manufacture, he advocated maceration, condemned the use of salted preparations, and also the use of spirit, chalk, magnesia, etc. He introduced a method for making the waters by the exomosis of oil, and concluded by noticing the different oils used, the composition of them before and after standing with water, and their precipitates, partly crystalline, in connection with it.

Mr. WALKER, of Northampton, corresponding member, in a communication, advocated the non-bruising of the fruits for waters, as it occasioned too much oil in the distillate. He noticed the solubility of camphor, and advised maceration in making cinnamon water.

Mr. PORTER, after calling attention to the history of waters spoke of the preservation of distilled water; he also referred to the solubility of camphor under different circumstances, and the resinification of some of the oils, as cinnamon. He advised the making of Aq. Lauro-Cerasi much stronger, and diluting it to a proper strength when required.

Mr. BEYNON noticed some remarkable oleographic differences in oils which had been in contact with water some time, and others which were in their normal condition, and thought this confirmatory of the action of water on oils referred to in the paper.

Mr. JEWELL asked for a plan for distilling water applicable to the wants of a small business.

Mr. PORTER said, that when in the country, he had made use of the kitchen boiler and the pump-trough as a condenser, and it answered the purpose very well.

A vote of thanks to the author of the paper, and to the chairman, concluded the business of the meeting.

On Thursday, May 5th, Mr. Bell in the chair, a paper on

THE DECOCTIONS AND INFUSIONS OF THE PHARMACOPEIA

was read by Mr. O. Cox. He pointed out that the decoctions differed only from the infusions in the continued application of heat, such being used in those cases where the momentary application of boiling water was not sufficient for the abstraction of the medicinal virtues of the substance.

Of course decoctions were not made of aromatic substances, or if such were ordered in them, they were directed to be added towards the end of the boiling, so that as little as possible of their aroma might be lost, as in Dec. Hæmatox., in which cinnamon, being in the P. E. form, was now ordered. Great improvements, Mr. Cox remarked, had been made in these two kinds of preparations; in two instances cold water was ordered in place of boiling, so as to prevent inert starchy and gummy matters from being dissolved out, as in the case of calumba and quassia, clearer infusions being obtained in each case; two other infusions, chiretta and cusparia, were ordered for similar reasons to be made with warm water; the time for infusing and also for boiling some of the decoctions was much shortened, and with great advantage, as in Dec. Aloes Co. Continued boiling caused insoluble matters to be formed, especially in Dec. Cinchonæ, in which, when cold, a large precipitate took place. He thought pharmacists should be very particular to stick to the Pharmacopœia time in making these preparations. In some instances, substances which formerly were subjected to the boiling process were now simply to be infused. The British Pharmacopœia directions, in which, after straining, the product was to be made up to a certain quantity, he thought very good, and much better than those of the P. E., which ordered them to be evaporated down to a certain quantity, or the P. D., which merely remarked that the product should be so much. The decoctions were now four in number, being twelve less than those in the P. L.; seven which were in either two or three of the Pharmacopœias were omitted, also five which were in the London alone, three in the Edinburgh alone, and two which were in the Dublin only. Mr. Cox then proceeded to notice the decoctions in alphabetical order. With regard to Dec. Aloes Co., a shorter time was ordered for boiling, as he had already remarked, and the saffron was to be added after it had been removed from the fire, as boiling destroyed its colour and aroma; still the decoction did not keep; it altered in taste and purgative power, and required some further improvement; he thought a stronger decoction would answer better. Dec. Cinchonæ was treated at some length. Only one kind of bark was now official for making decoction, instead of three, as in the P. L.; it was now ordered to be strained when cold. It was an unsatisfactory preparation, as Mr. Squire said, as much quinine was left in the bark as taken out. Dec. Hordei Co. was, to the benefit of dispensers, omitted, and the simple decoction did not require as much manipulation as formerly. Dec. Sarsæ and Dec. Sarsæ Co. were of course commented on. He remarked that, as there was a simple fluid extract of sarsaparilla, he thought there should have been a compound one as well, being more used and more beneficial. Dec. Taraxaci was now to be made from the dried root, instead of the fresh as in the P. L., or the fresh herb and root as in the P. E.

Mr. Cox next passed on to the infusions, and again noticed the shorter time required in making them. In the exceptional case Inf. Lini, he thought a decoction boiled only for one or two minutes would have answered as well as the four hours' maceration. Inf. Aurantii was a new preparation, but already much prescribed. He discussed the advantage of making Inf. Calumbæ with hot and cold water, noticing Mr. Greenish's experiments in the matter; he thought that the cold water infusion did not keep so long as a hot. Inf. Gent. Co. received some remarks. Mist. Gent. Co., the P. E. infusion, was not needed in English practice; he saw no advantage in such a preparation. After noticing the chief alterations in the other infusions, Mr. Cox concluded by saying that infusions seemed to have gone out of date, fortunately so in one respect, but to the disadvantage of the pharmacist in another, as medical men now instead of using them resorted to concentrated drops, tinctures, etc., which were not so remunerative to the chemist or the physician either.

The CHAIRMAN, in the course of his remarks, said he thought there was no occasion for both a decoction and infusion of bark, and asked why was one 1 oz. to a pint and the other 1½ oz. to a pint. He exhibited some Inf. Sennæ made with cold water instead of hot. Groves had pointed out that cold water extracted the purgative principle of senna; decomposition was not so likely to ensue, and it kept better. He put the question: What was the best infusion

jar to use? He thought Squire's, but as substances were now ordered to be infused such a short time, perhaps it did not matter what kind of jar was used.

Mr. SANDS thought that a preparation of aloes made with cold water would be better than the decoction; in fact, he knew some makers who made the *decoction* by the cold method. By boiling the aloes became resinified, consequently a large precipitation took place in time; the difference in taste, the decoction losing its bitterness, was attributable to this he thought.

Mr. BROWNEN wanted to know if any one had seen Inf. Cusso prescribed. He said one would think all were troubled with worms, seeing what a lot of worm physic the Pharmacopœia had given us, and that there ought to be no hope now for the wandering worm-doctor. He should not like to take the *Mist. Cusso*; he also thought that a concentrated Dec. Sarsæ Co. or a compound liquid extract should be officinal. Dec. Scoparii, he remarked, having lost its juniper and dandelion, was as simple a form for broom tea as any old woman could wish.

Mr. BLETSOE made some remarks upon the decoctions and infusions generally. He thought that the decoctions of taraxacum and sarsaparilla, and also of cinchona and pareira, might be omitted altogether, now that there were better preparations of each in the Pharmacopœia. It seemed to him to encourage medical men to prescribe what were comparatively worthless preparations. He thought the quantities of ingredients in some of the infusions really absurd, and in no class could more uniformity have been adopted so easily and a metrical system introduced. At present one was obliged to use two kinds of weights in making three of them, and in five instances *Troy* weights only could be used instead of *avoirdupois*; he thought that in no instance need the quantities have been expressed in grains, as a different quantity of infusion might have been ordered to be made.

The use of concentrated infusions was also brought forward in the discussion.

A vote of thanks to the giver of the paper and to the Chairman terminated the proceedings of the meeting.

On Thursday, May 12th, Mr. Bletsoe in the chair, the Secretary read Mr. Bell's paper on

THE EXTRACTS OF THE PHARMACOPŒIA.

It began with remarking that extracts were a most important class of pharmaceutical products; they were meant, and ought, to represent the soluble and active properties of vegetable substance, separated from their inert matters of structure, and condensed into a smaller volume for internal use, etc. Several things required to be distinctly understood before we commenced the process of extraction: first, the quality and character of the plants; secondly, their liability to change by desiccation or inspissation; thirdly, the best extractor; and fourthly, the action of heat on them. For a good yield and a representative extract the substance must be in a good condition, and gathered at the time when its principles are fully developed. This was of course easy when we had ripe plants to deal with, but not when unripe were to be used, as bael; consequently such extracts varied in quality. By drying, many principles were either lost or oxidised, and during inspissation remarkable changes often occurred—physical, as in colour, and chemical, as in the resinification of aloes. Under the head of the best extractor must be included the cheapest and quickest solvent which removes the principles and leaves them in the extract in their original and natural arrangement; and lastly, under the action of heat, must be considered its power of driving off aroma, its coagulating albumen, and its solvent action on gums, starch, etc. Practically, it was remarked in the paper, the manufacture of extracts, more especially the solid extracts, was in the hands of a few, who made it their special study, and who had appliances for producing large quantities. The solid extracts were first commented upon. Ext. Aconiti was now made from the flowering tops as well as the leaves, they having been shown to contain aconitine, therefore, the waste demanded by the P. L. was avoided. The process for making it was more elaborate, chlorophyll being first separated, next the albumen removed, the liquid evaporated down, at the temperature of a water-bath, to a syrupy consistence, and the chlorophyll added again; the evaporation being continued at a heat not exceeding 140° F. The

fermentable albumen being thus removed, we had a more stable extract. Mr. Bell next mentioned a plan for standardizing this and other extracts. Now that the chlorophyll is separated, but again added, might not so much of it be stirred in so as to bring the extract to a fixed percentage of aconitine? An extract with a definite quantity of a poison like aconitine would certainly be better than an indefinite one like the present.

The omitting the three days' maceration at a gentle heat was a great improvement in making the extracts of aloes; so much resinous matter was not formed now, and the extracts almost entirely redissolved in water. Ext. Anthemidis, hailing from "the land of cakes," had its formula improved by the addition of its oil lost in inspissation. With regard to Ext. Belladonnæ, his remarks upon Ext. Aconiti applied to it, and also to the extracts of hemlock and henbane; Ext. Conii being a difficult one to make, its active principle was so volatile. As to what the active principle of henbane was like, chemists disagreed. Ext. Calumbæ was new, cold water was used to keep out starch, the filtering process was troublesome, but Schacht's filter overcame it. Ext. Cannab. Ind. was a spirituous extract of Indian hemp, being really an impure resin; as it was a remedy of some note in India, it had been transplanted to our Pharmacopœia, but it did not like us nor our climate, for its effects were very variable. Two extracts of colchicum were still officinal; one was perhaps for the prescriber who did not order incompatibles. Ext. Coloc. Co. had now its proper name; resin of scammony was an improvement in it; but why was spirit necessary to extract the colocynth, colocynthiu being soluble in water? Ext. Gentianæ was now made by a quicker process; gentian, it being remarked, yielded any quantity of extract according to the time boiled. With regard to Ext. Glycyrrh. this question was asked: What was the advantage of using liquorice root in powder instead of the fresh root as ordered in the P. L.? Ext. Hamatox. and Ext. Krameria were next noticed; they were dry affairs, and with regard to Ext. Hamatox., Phillips said when made into pills it passed through the system unchanged. There was a caution against the use of iron vessels in making; the same caution should have been given with other extracts. Ext. Jalapæ was now of pilular consistence; it would have been better omitted, like Ext. Scammoniæ, now that the resin was officinal. In the author's remarks on Ext. Lactucæ he asked why lactucarium had been left out of the Pharmacopœia; it was more frequently prescribed than some of the inserted preparations. Ext. Lupuli had by the aid of spirit more aroma. Ext. Mezerei Ether. received a long comment; it required a great deal of manipulation for its manufacture; the form for making it, but not the article itself, came from the Continent. In the Codex there was an ethereal extract of Daphne Guidum, the strongest irritant of the species; it was used for making a rubefacient paper. Now why was not the article, as well as the form, introduced? It would have answered better for forming part of a liniment; a strong tincture, too, would do instead of an ethereal extract. As much of this extract comes from abroad, might it not be Ext. Guidii Ether. after all? In making Ext. Nue. Vom., would not percolation answer instead of boiling? the form for making Ext. Opii remained but little altered. Ext. Papav. was purified from fermentable matter by the aid of spirit, which was, however, it was remarked, scarcely sufficient. Ext. Pareira was now made by percolation instead of maceration; an acidulated watery extract would perhaps be better. Ext. Physostigmatis, a soft spirit extract, was a new addition and a treat for the oculists. Ext. Quassia was a Scotch legacy; its particular virtues are unknown to us at present. With regard to Ext. Rhei, might it not be made by percolation? The exhaustion of the root would be better accomplished by treating it with ammonia, extracting the soluble alkaline ehrysammate. Ext. Stramonii, the author proceeded to say, was another extract in which ether was used. Could not most of the oil be got rid of by means of boiling water and skimmed off, and then the stramonium extracted with spirit and water? The last of the solid extracts noticed was Ext. Tarax., now obtained from the purified juice. The author then proceeded to notice the liquid extracts of the Pharmacopœia, the Ext. Belæ Liq. was an unstable preparation; it fermented, and there did not seem to be enough spirit to keep. The average specific gravity of this preparation, which was not stated in

the P. B., he had found to be 1.065. A large quantity of cinchonin red and oxidised matter was deposited in the lengthy evaporation required in making Ext. Cinchonæ Fl. Liq. In Ext. Ergotæ the use of ether might again have been dispensed with. Ext. Filicis Ether. was pointed out to be an extract of the fatty acids of the male fern. Ext. Opii Liq. was merely a solution of a previously obtained extract; it was intended, perhaps, to imitate Battley's preparation, which it did somewhat after being kept a little time. It would have been better if Ext. Pareiræ Liq. had been ordered to be made in the same way, the varying qualities of the root would then be avoided. Ext. Sarsæ Liq., the last of these preparations, was also noticed; it was ordered to be made by cold maceration; more of aroma perhaps was retained and little starch, the granule of which, the author remarked, was rather remarkable for shape.

The CHAIRMAN thought that so long as extracts of strong substances were official, they certainly ought to be standardised; perhaps the doing of such was before the times, but chemists generally, he hoped, would soon be able to do it themselves. He would rather go, though, at once to active principles. Extracts, he thought, were after all but remnants of old pharmacy.

Mr. PARSONS made some remarks upon Ext. Calumbæ. He thought manufacturers did not attend strictly to the Pharmacopœia directions and filter the infusion, consequently much starch was introduced into the extract. Several samples he had seen were not at all satisfactory; the best samples became stringy after being kept a short time.

Mr. JEWELL spoke of the varying effects of Ext. Aconiti, and certainly thought it ought to be rendered of a certain strength. The Pharmacopœia dose he had known to astonish students. He thought the plan of standardising mentioned in the paper, which was like one suggested by Mr. Brownen, was very good. The adding of the chlorophyll to make an extract of a certain strength would be much better and more practical than that of assigning a definite degree of hydration.

A vote of thanks to the author and to the reader of the paper, and also to the chairman, brought the proceedings to a close.

CHEMICAL SOCIETY.

At the meeting, May 19th, WARREN DE LA RUE, Esq., F.R.S., Vice-President, in the chair, Mr. S. H. Johnson was elected a Fellow.

Mr. GRIFFIN exhibited and explained a new gas furnace, which is capable of melting about 3 lbs. of iron in little more than an hour.

Mr. WALENN described an electrolytic method for coating cast-iron objects with copper or brass. A calico-printing valse and other articles, worked in this manner, were submitted to the inspection of the assembly.

Mr. TOOKEY, Assayer in the Japanese Imperial Mint, communicated a paper on the

MANIPULATION OF ASSAYS OF GOLD AND SILVER BULLION.

To effectuate a saving of time the author proceeds in the following manner: Each bullion is placed into a platinum tube closed at one end with a perforated plate; several such tubes are supported by a porcelain tile which, for that purpose, is provided with circular holes; the entire arrangement is then immersed in nitric hydrate, and proceeded with as if a single bullion had to be treated. In the case of the assay of silver a contrivance, similar in principle, is employed, to do away with the hammering and brushing of the buttons after they have been detached from the cups; the solvent used here is hydric chloride.

Mr. PERKIN read a note

ON SOME BROMINE DERIVATIVES OF COUMARIN.

The author succeeded in obtaining the following definite compounds: Dibromide of coumarin, $C_9H_6O_2Br_2$, Bromocoumarin, $C_9H_5BrO_2$, and Dibromocoumarin, $C_9H_4Br_2O_2$. The two latter substances yield, when boiled with an aqueous solution of potash, the potassium salts of two new acids, probably bromo and dibromocoumaric acids.

Dr. DIVERS gave some remarks on the precipitation of solutions of ammonic carbonate, sodic carbonate, and ammonic carbamate, by calcic chloride. The results of these experiments are chiefly of interest, as supplying a characteristic reaction for the carbamate.

Dr. THUDICHUM made a short communication about having obtained hydric acetate from fresh urine.

At the meeting, June 2nd, Professor WILLIAMSON, F.R.S., President, in the chair, Mr. W. B. Tustin was elected a Fellow.

Professor ODLING, F.R.S., delivered a lecture on

THE PLATINUM AMMONIA COMPOUNDS.

Platinum unites in two different ratios with chlorine. In the one case with four atoms of chlorine to form platonic chloride, $PtCl_4$; in the other, with two atoms of chlorine to form platinous chloride, $PtCl_2$. The latter compound produces, by direct union with chlorine, platonic chloride. The platonic ammonia compounds are derived from the platinous chloride. If this is borne in mind, a great simplicity will at once be introduced into the study of these compounds. After having drawn a comparison between sal-ammoniac and some compounds analogous to it, the lecturer concluded his prefatory remarks by dilating on the necessity of studying the processes and reactions of mineral chemistry in the light of organic chemistry. He then proceeded to give a short history of the platinum ammonia compounds, beginning with the so-called green salt discovered by Magnus in 1828, mentioning the salts prepared and described by Gros, Reiset, Peyronne, and others, and closing with Laurent and Gerhardt's classification of these bodies. This classification is by no means satisfactory, and Dr. Odling, after having briefly pointed out its shortcomings, promised to communicate at some future meeting his own views on this subject.

MIDLAND COUNTIES CHEMISTS' ASSOCIATION.

The first annual meeting of the above Association was held at the Temperance Hall, Birmingham, on May the 27th, the President, Mr. Wm. Southall, in the chair.

There was not a large attendance of members.

The Hon. Sec. read the report of the Council and statement of accounts, which show that the Association is of service to its members, and has a balance in hand of upwards of £12.

REPORT PRESENTED BY THE COUNCIL OF THE MIDLAND COUNTIES CHEMISTS' ASSOCIATION, MAY, 1870.

The Council, in presenting their first Annual Report to the members of this Association, prefer giving simple statements of their proceedings for the past year, and submitting the same without comment, either congratulatory or otherwise. The object of this Association being the general advancement of the interests of the trade, it will be perceived how far the Council have kept that object in view.

After three preliminary meetings, a general meeting was held on May 7th, 1869, which was numerously attended, and there were appointed the President, Treasurer, Hon. Secretaries, and Council, who were entrusted more especially with the preparation of a dispensing and retail price list. In compliance therewith the Council held no less than nine consecutive meetings, which were followed by a general meeting, and the price list, as it now stands, was adopted and circulated to each member of the Association; a charge of one shilling per copy was made to non-members beyond the precincts of Birmingham.

In the course of these meetings efforts were also made to unite the members of the trade in the one common object; your Council canvassed the whole of the town, when the number of enrolled members reached just over one hundred; also, about 250 Chemists of the neighbourhood were invited by circular, etc., to join, and upwards of thirty of these sent in their names and subscriptions.

An invitation from the Pharmacutical Conference was received and acknowledged for a deputation from this Association, but its formation being too recent, it was deemed advisable to decline. The supper at Nock's Hotel was not

so well attended as desirable, but a very pleasant evening was spent by those present.

Your Council have had their attention called to the objectionable practice of a small shopkeeper vending paregoric, but on this occasion could not take further proceedings.

A deputation was appointed to wait upon the Borough Inspection Committee, relative to the exorbitant charge for the licence for the sale and storage of petroleum, under the new Act, which took place on December 22nd, 1869, and although letters were read from Liverpool, Manchester, and Bristol, stating the low terms for the licence in those places, the Borough Inspection Committee refused to make any alteration.

An appeal from the Birmingham Chemists' Assistants' Association applying for accommodation to hold their weekly meetings, was made to the Council, when it was unanimously resolved that arrangements should be entered into with the Temperance Hall Committee to grant them the use of a room for that purpose for a period of six months, ending June, 1870. Action was also taken in unison with other associations objecting to any legislation interfering with the storing and dispensing of poisons.

The Association has been the medium of compelling a self-styled chemist and druggist to take down his sign-board, and the Secretaries, with the consent of the President, deemed it expedient to caution the members against being duped by a vendor of questionable vermin eradicator.

Your Council now retire from their duties, which they have endeavoured to carry out faithfully, and hope that their successors will be able to accomplish much more for the welfare of chemists and druggists, and for this Association in particular.

The election of officers for the ensuing year, and the consideration of Mr. Arblaster's letter to the Home Secretary on the amount charged for the petroleum licence in Birmingham, formed the chief business of the meeting.

JOSEPH LUCAS, 4, Colmore-row,

A. STIRLING GRIEVES, 16, Spiceal-street, } Hon. Secs.

June, 1870.

LEICESTER.

At a meeting of chemists and druggists of Leicester, held on the 9th instant, Mr. Merryweather in the chair, the Hon. Sec. *pro tem.* (Mr. Richardson) in proposing the following resolution: "That, in consideration of the Pharmacy Act of 1868, it is most desirable to form a local association of Pharmaceutical and Registered Chemists and Druggists for the town and County of Leicester," said, that considering the business of a chemist and druggist had become a profession, legalized by an Act of Parliament, he thought that it was their duty to unite themselves together as a body to prevent as a body any undue encroachments made upon their business by persons who were not legally qualified, and to form a society among themselves for the protection of the sale of various articles by grocers and shopkeepers, whom he knew were selling certain medicines (specified) which legitimately belonged to the drug trade. It was not to be tolerated that this sort of thing should be continued, and he for one was anxious that it should be put a stop to. If the society was formed it would be his duty to take such steps as might be deemed necessary against all parties infringing the Pharmacy Act, and with that view he proposed the resolution.

Mr. J. W. CLARK in reply stated that it must be borne in mind that they had already a Chemists' Assistants' and Apprentices' Association, established in the town; a society which had not only worked uncommonly well, had been established for educational purposes in reference to the Pharmacy Act, 1868, and had been remarkably successful. For his own part he thought this Act was much more stringent than even its promoters intended, and bore oppressively upon many of the grocers and shopkeepers in the country as well as on the consumers of drugs. What had been wanted for some time was that which he had already alluded to, and which had been in existence some eighteen months. He must say that he did not think the members of that Association had met with the courtesy they

should have received, considering the work they had done, and which was highly creditable to them. The least the Hon. Sec. might have done was, before attempting to form an association of the kind now proposed, to have consulted with the elder and highly respectable members of the trade in the town and the Committee of the Chemists' and Assistants' Association, then probably there would have been some degree of success attending it. But where were they? How many of those senior members were present besides himself? Two! That, in his opinion, was a sufficient proof that the meeting had neither the sympathy nor support of the leading members of the trade in this movement, and he thought it much better that the existing Association should be left working its own way, which he was confident it would, especially if they gave that support to which it was justly entitled.

Mr. E. H. BUTLER congratulated the Hon. Sec. upon the change of *venue* which had taken place since their last meeting. Then a society was to be formed to educate the chemists, their assistants and apprentices. Now it was to resist encroachments, and thought if steps were taken to obtain a more simple and clear definition of the Patent Medicine Act, it would have been far preferable. He did not think that any gentleman connected with the drug trade would like to have his name connected with any prosecution for an infringement of the Pharmacy Act. They would endeavour to rise above that, as this duty very properly belonged to the Registrar and Council of the Pharmaceutical Society.

Mr. RICHARDSON: It is desirable to have papers—monthly papers—to treat upon chemistry, etc., for the benefit of the trade, and, if possible, secure the services of Mr. Atkins and others.

Mr. BUTLER said the association to which he had the honour to belong, already had had the pleasure of listening to two or three of Mr. Atkins's lectures on chemistry, and that gentleman had very kindly promised to deliver other lectures at some future time. He might add that, with their esteemed President, Mr. J. Young—a gentleman whose heart and soul was with the association, and who was probably as well up in chemistry as any junior member of the trade in Leicester—they had some of the best talent in the town for the purpose; and, whilst they had principals in the trade who had not considered it *infra dig.* to read papers, yes, even before a meeting of assistants and apprentices (as one had stated it would be), and had other efficient members in *materia medica* and arithmetic appointed to take the classes, he thought they were well provided for. He might further say that any gentleman connected with the profession who had not attended the lectures, and who felt inclined to do so, he was sure would receive a most cordial welcome, and would be as much gratified, as, in some instances, he would probably be instructed.

The first resolution not meeting with a seconder, a vote of thanks was proposed, carried, and suitably responded to by the Chairman when the meeting terminated.

BANKRUPTCY.

IN RE HEBDEN AND FOXCROFT, PRUSSIAN POTASH MANUFACTURERS, LEEDS.

This matter came before Mr. Marshall, the Registrar of the Leeds Bankruptcy Court, when it was stated that the trustee had failed to ask for any accounts, and, on the application of Mr. Spinett, the Registrar granted a short adjournment for that purpose.

GAZETTE.

ANNOUNCEMENTS OF FIRST GENERAL MEETINGS.

HARRISON, FREDERICK, Vaughton-street South, Birmingham, chemist and druggist.
MORGAN, DAVID, 6, Upper Rock-gardens, Brighton, doctor of medicine and surgeon.
NICHOLAS, WILLIAM RICHARD, 1, Amhurst-road, Hackney, chemist.
PHILLIPSON, FREDERICK EZEKIAH, Great Grimsby, chemist and druggist.
SEATH, GEORGE, Glumangate, Chesterfield, chemist.

PARTNERSHIPS DISSOLVED.

BELL, ALFRED and Co., Ambor Mills, Shirland, Derby, mustard, ginger, and arrowroot manufacturers and merchants; March 1. Debts by Alfred Bell, who continues the business.

BURGESS, JOHN and SON, 107, Strand, Mx., Italian and oil merchants, and fish sauce manufacturers; May 17, as far as regards Arthur Wellington Burgess. Debts by Elizabeth Ann Sellon Burgess Burgess, Mary Ann Burgess, and Louisa Elizabeth Burgess, who continue the business under the same style.

DOWS, CLARK, and VAN WINKLE, late Great Wild-street, Lincoln's-inn, new 6, 7, 8, and 9, Bedford-street, and 1, Chandos-street, Strand, Mx., manufacturers of machinery for making soda-water, and for the manufacture of ice-cream, soda-water, and other iced drinks; May 26. Debts by the new firm of Dows, Clarke, and Co.

HARRIS, JOHN and SON, 33, Beech-street, and Grasshopper-court, St. Luke's, Mx., chemists and varnish manufacturers; May 3.

KERNICK and BOWRING, Cardiff, Glamorgan, chemists and druggists; Feb. 26, by Decree of the High Court of Chancery. Debts by John Woodman Bowring.

SHUTE and ROOKE, Greenwich, Kent, general practitioners in medicine and surgery; May 1. Debts by Gay Shute.

WITHEY and Co., Bath and Bristol, aerated water manufacturers; March 5. Business continued by Henry Gale Gardner, Bristol, wholesale grocer, under the style of Withey and Co.

Trade Memoranda.

WHEN it comes to be legally necessary, as it assuredly will, to send out poisons in some distinctive style, it will be very advantageous if one special system can be agreed upon and adopted by the whole trade. Unless this is done, the public will never come to understand the arrangement at all. There is now before us a choice of three courses, either or all of which may be selected as the best method of indicating the dangerous character of the article to be protected. We may either mark this by labels, corks, or bottles. Of bottles the variety of shapes is most abundant, some being pretty and some ugly, as the fancies of the manufacturers happened to dictate, but with the one leading idea in them all to make them different from ordinary bottles. That a bottle can be made distinctive enough is quite clear to us all, but there are certain objections to these being the standard, which weigh very strongly with many pharmacutists. Necessarily they are more expensive, and it would be a hardship if a chemist were required to exchange every old, chipped, and dirty bottle when such was brought to him for a pennyworth of something that might be dangerous, for one of his costly poison bottles. But even if this could be done, the reverse case could hardly be carried out. Harmless things would certainly go in poison bottles, and they would probably become the favorites for the little drops of gin which old women in the country like to keep by them. These are certainly objections which have often been expressed. A poison cork seems to us more capable of being generally adopted; but we cannot help thinking that, after all, labels of some kind or another must be the most generally accepted plan. It is here that we look for a description of the contents, and as is evidenced by Mr. Thonger's patent, these can be made very marked in their individuality, even to those who cannot, or will not read. Besides, a label is applicable to parcels as well as to bottles, and from the latter is easily removed. We have no wish to prejudice the case, however. It is purely a subject for the consideration of practical dispensers; but we cannot doubt that from this time, and without the stimulus of outside pressure, many will begin to see that, if only as a matter of form, something ought to be done.

Mr. Silverlock has recently published a complete set of poison labels, for the dispensing counter, in one book. The labels are distinctive in shape and colour. They are black on red and varnished. On each the figure 1 or 2 is printed to indicate the schedule in the Act to which the article belongs, and in those cases where it can be done the dose is also given and the proportion of the poison in compounds. The book contains eleven dozen printed labels, and one dozen blanks and will please all who use them.

Mr. Thonger, of Liverpool, has fitted up little boxes to contain a supply of his patented labels for those who would like to use them. They comprise labels for liniments, lotions, &c., as well as laudanum, oxalic acid, and others frequently required. It is a very convenient form to keep a stock of these little danger-signals.

Mr. C. Rogers, of the Eye and Ear Hospital, Birmingham, sends us a bottle with an elastic band fitted which is easily attached to the cork and makes the bottle very distinctive; and we have also received a model of a new bottle, with a letter asking for our opinion. It is a new shape, but it seems to us neither better nor worse than any other peculiarly shaped bottle.

Mr. William Sandall, druggist, of the Drapery, Northampton, has succeeded to the business formerly carried on there by Messrs. Welchman and Sons.

Mr. E. E. Welchman (formerly partner of the late firm of Welchman and Sons) chemist and druggist, still continues to carry on that portion of the business carried on in Gold-street, Northampton.

A humorous incident is reported to have occurred at the East Suffolk election; one of the candidates, Lord Mahon, appeared so nervous while speaking after the nomination that he afforded abundant opportunity for good-humoured chaff. The chief hit, however, was made during one of his lordship's pauses by the passing of one of Maw's feeding bottles, filled with milk, over the heads of the crowd to the hustings apparently intended for the nourishment of the noble candidate.

A printer's error occurred in the advertisement of Messrs. Leath and Ress last month, whereby the prices attached to certain homœopathic cases were transposed. The quotations are corrected in this issue.

In a report from the North London Hospital, Dr. Charles Drysdale speaks highly of Fox's Palatable Cod Liver Oil, recently noticed in this journal. He says it is very palatable indeed, and patients who could not take Cod Liver Oil by itself, or with the addition of Sulphuric Ether, took and retained this without difficulty.

Nature informs us, that among the objects of interest exhibited at the *soirée* of the Linnean Society on the 27th ult., was a collection of plants made by Mr. W. W. Saunders, arranged in pairs; the plants forming each pair belonged to entirely different natural orders, but were so remarkably alike in the general form, and even in the marking of the foliage, as to be barely distinguishable even to a practised eye. One of the most strikingly "mimetic" pairs were a Conifer and a Selaginella, belonging to the two sub-kingdoms of flowering and flowerless plants.

The ground, says the *Athenæum*, is being cleared for the new buildings of Owen's College, Manchester. The part which will shortly be commenced is to form one side of an oblong quadrangle. The chemical laboratories will be larger than any now existing in England, and than most of those of Germany, and they will easily accommodate one hundred students. There will also be an extensive physical laboratory and a good museum of geology, comparative anatomy and zoology. The college is by no means exclusively devoted to science, and there will be well-arranged lecture-rooms for the various branches of the Arts department.

The same journal is informed that the Duke of Devonshire will probably be the President of the Royal Commission to inquire into the present state of science in this country.

We learn from the *British Medical Journal*, that the Council of the University of Edinburgh has determined not to admit women to the medical classes "as other students are" admitted, "and on the same terms." At the recent meeting of the Council, Professor Masson's motion in favour of equalising the conditions for male and female medical students was keenly debated, being opposed by Professor Laycock and Professor Christison, and ultimately negatived by a majority of 11 (58 and 47 being the numbers.)



THE *Scientific American* gives the following useful household recipes:—

TO IMPROVE STARCH.—To each bowl of starch, add one teaspoonful of Epsom salts, and dissolve in the usual way by boiling. Articles starched with this will be stiffer, and will be rendered to a certain degree fire-proof.

TO REMOVE STAINS FROM LINEN.—To remove wine, fruit, or iron stains, wet the spot with a solution of hyposulphite of soda, and sprinkle some pulverised tartaric acid upon it, then wash out as usual. Strong vinegar can be used instead of the tartaric acid.

MOTH POWDER.—Lupulin (flour of hops), 1 dram; Scotch snuff, 2 oz.; gum camphor, 1 oz.; black pepper, 1 oz.; cedar sawdust, 4 oz. Mix thoroughly, and strew (or put in papers) among the furs or woollen to be protected.

LIQUID FOR CLEANING SILVER.—Add gradually 8 oz. of prepared chalk to a mixture of 2 oz. of spirits of turpentine, 1 oz. of alcohol, $\frac{1}{2}$ oz. of spirits of camphor, and 2 drams of aqua ammonia. Apply with a soft sponge and allow it to dry before polishing.

A country druggist asks any kind friend in the trade to oblige him with a form for a nice hair cream that will not separate.

A correspondent from Liverpool has puzzled us by asking, What is the origin of the word Drysalter? He suggests an ingenious explanation, but we know not on what authority, that the name was originally Drug-sorter. Has any chemist special information on this point?

J. M. S. (Manchester).—In competing for the prizes offered in the Corner for Students, you may use any and every means for acquainting yourself with the subject, but let your answers be original.

G. W. P. (Manchester).—The "Homœopathic Pharmacopœia" is published at 10s. 6d. Our publisher will supply it to you if you wish it.

Anglicus.—We are not able to answer all your questions, though we would willingly have made inquiries if you had conformed to our rules. We ask that the real name and address shall, in all cases, be given us, as well as any assumed name by which our correspondents may choose to appear in print.

J. Tully (East Grinstead).—The only comprehensive work on the chemistry of oils and fats is "Chemical Technology," by Richardson and Watts.

LIST OF NEW BOOKS.

- Airy's Geometrical Optics. 12mo., 3s. 6d., cloth.
 Clark's The Foot of the Horse. 4to., 10s. 6d., cloth.
 Cooke's First Principles of Chemical Philosophy. Cr. 8vo., 12s., cloth.
 Fox's Eczema, its Nature and Treatment. 8vo., 3s. 6d., cloth sewed.
 Holme's System of Surgery, Vol. 3. 8vo., 21s., cloth.
 Hothouse's Hernial and other Tumours of the Groin, etc. 6s. 6d.
 Hooker's Student's Flora of the British Islands. Cr. 8vo., 10s. 6d., cloth.
 Liveing's Notes on Treatment of Skin Diseases. 18mo., 2s. 6d.
 Millington's Selections for Latin Prose. Cr. 8vo., 3s. 6d., cloth.
 Notes on Nine Lectures on Light. Cr. 8vo., 1s. 6d., sewd.
 Nature; a Weekly Illustrated Journal of Science, Vol. I. 10s. 6d.
 Owen's Practice of Perfumery. Cr. 8vo., 2s., cloth.
 Tyndall's Researches on Diamagnetism, etc. 8vo., 14s., cloth.
 Weightman's Medical Practitioners' Legal Guide. 8vo., 16s., cloth.



CHEMISTS AND THE CO-OPERATIVE MOVEMENT.

TO THE EDITOR OF THE "CHEMIST AND DRUGGIST."

SIR,—It is admitted on all hands that the co-operative movement, even in its present stage, is inflicting a great amount of actual hardship on the trading middle-class, and this being so, we cannot but view with anxiety the rapid strides it is making in the number of its clients and extent of its operations.

To all tradesmen this is a most important point; for let not, on the one hand, the old-established houses imagine that the prestige of their names will secure them, nor, on the other hand, those dealing with the lower classes suppose that the movement will not spread downwards as surely, if not so quickly, as it has already done upwards.

The country shopkeeper may selfishly say, "it does not concern me;" but let me tell him that it does, even though he hears nothing of it, as it is the constant practice in many large households to have goods down once or twice a week, and which are settled for by money sent in advance, although the resident tradesman risks losing the custom if he presses for payment after many months' credit.

In this time of need, I unhesitatingly assert that in the active copying of the enemy's tactics is alone to be found the means of relief. Let us each one and all consistently close our present accounts, and refuse to open any fresh ones with any house known to be engaged directly or indirectly in supplying the Civil Service or any co-operative stores.

I, and probably hundreds more, do not know that we have ever lost any customers by these societies, but the welfare of the body depending on that of each of its members, I think we should not consider the for and against simply as regards ourselves.

I am well aware there are other proposed modes of dealing with this difficult subject; but, so far as I can judge, they seem both illogical, and all possessing the great fault that they proclaim to the world, in a manner beyond all dispute, the apparently disproportionate price of the same article supplied by the retailer and the co-operative store, and thus must inevitably lead to an enormous increase in the trade complained of.

In conclusion, I may say I have acted on the plan I have indicated, and I cannot but think that if generally carried out it will, by causing many houses to close their accounts with the stores, inflict a strong check on the latter, at the same time that they receive from us no gratuitous advertisements.

FREDERICK COLE,
Stoke Newington. Pharmaceutical Chemist.

PHARMACY IN IRELAND.

TO THE EDITOR OF THE "CHEMIST AND DRUGGIST."

SIR,—As there has been some talk of applying the Pharmacy Bill to Ireland, I think a few remarks on the subject might not be out of place at this time. The drug trade in Ireland is represented by two distinct classes of men—apothecaries and druggists; the latter frequently styling themselves grocers and druggists. The apothecary carries on business under his diploma, which indicates that he has studied medicine for the prescribed period. Of course, this diploma entitles him to practise surgery as well as to dispense prescriptions. The druggist keeps open shop for the purpose of retailing drugs and groceries, including horse and cattle medicines, oils, colours, seeds, etc., but he cannot dispense prescriptions without incurring a heavy penalty for each offence. The apothecary is well qualified for his work, having passed a thoroughly classical examination, and received the same amount of mental training which would qualify him for the degree of surgeon in this country.

The druggist, on the other hand, has not been so trained; he may be a very intelligent man, but any theoretical

knowledge he possesses has been acquired optionally on his part. The Pharmaceutical Society, in endeavouring to bring about the same state of things in the drug trade throughout Ireland, as at present exists in this country, would respect existing interests, but I do not see how the non-pharmaceutical portion of the drug trade there could be admitted to the practice of pharmacy in its widest sense, without undergoing some preliminary test, for dispensing has never formed a part of the daily duty of a *druggist* in Ireland.

When the Pharmacy Act of 1868 came into operation here the case was widely different. Many were admitted to the full privileges of the Act without undergoing any examination from the simple circumstance of their having kept open shop for the dispensing of medicine before the passing of the Act, this being considered sufficient guarantee of their capability to discharge their duties correctly under its provisions. But these unexamined chemists and druggists did not obtain any new privileges. They simply continued to practise as before. Now, in the case of druggists in Ireland, by far the greater number would have a privilege conferred upon them for which they would be totally unfit; and, as the number of druggists greatly exceeds the number of apothecaries, I think it would not be justice to the regularly qualified apothecary to allow druggists to dispense prescriptions without passing some examination to show their fitness for this onerous duty. Yet, in justice to the Irish druggist, considering that their vested rights are in their business, it would be necessary to modify the laws relating to poisons, in order that they who were not willing to submit to the required test, might be allowed to carry on business within certain limits as at present. Vested interests being thus protected, all who could show themselves competent to grammatically translate and dispense a prescription, should be placed on the "Register of Chemists and Druggists."

Yours, etc.,

London.

GRADATIM.

ATOMIC FORCE.

TO THE EDITOR OF THE "CHEMIST AND DRUGGIST."

SIR,—I was pleased to find that you admitted my communication on Atomic Force to your columns, notwithstanding the unfavourable impression produced on you as implied in the brief criticism.

No doubt it appears from your point of view, a "philosophic rhapsody." I have no inclination to follow the course of the fabled knights and shield. My object is not controversy. I will just draw your attention to the evidence on which I base my observations. Let me say, before entering into consideration of the subject, that I claim to be well posted in the popular views of modern science, and do not dispute a single well established scientific fact. It is only in relation to a question for which science has hitherto furnished no answer, that I attempted to give one. You are aware that although our *savants* have a knowledge of natural effects and of mechanical law in relation to matter, they are in the dark as to the causes of these effects and their *natural law*; they acknowledge themselves to be in ignorance of the medium through which natural phenomena are produced, or of force in matter and its *modus operandi*. There is the point at issue. They confess that, to them this is a shrouded mystery, and they admit their inability to uncover it.

It is stated by M. Dumas, in his first Faraday lecture, that the "Four Great Topics," which he styles "The nature of inorganic matter, and the nature of the force by which it is operated upon; the nature of organic matter, and the nature of the force operating on this matter," were problems which had occupied the ancient world, and particularly the Greek philosophers; yet maintained that, in substance, our real and ultimate knowledge was in the same state as that of the Greeks, and went no further. He affirmed that, of ultimate force we know no more than Aristotle did, and that the knowledge of it rested with One above. He denied that the chemist, with all his endeavours, had ever imitated life itself, or would ever be able to produce a living being. There must be a living seed for a living plant, and a living

egg to produce a living animal. These, he said, were far above human power, and within the power of God alone. It is well known that these opinions, expressed by M. Dumas, are entertained by all our leading scientific men.

While holding to the opinion of the inexplicability of the nature of primary force, it is not at all likely that they will look with patience at any theory which attempts an explanation. From their point of observation the thing seems, and they have so far proved it to be, impossible. If any endeavour of this kind is made it must necessarily be out of the beaten track. At all events, the attempt at explanation implies the unfolding of facts and principles hitherto unknown. However presumptuous it may appear, I have, in good faith, made the effort and challenge fair criticism.

That matter is operated upon by an invisible power through some fixed law, is admitted. If our scientific men have no more knowledge of this power than the ancients had, is it not time that some one should leave the "beaten track" and take a "short cut" to find that knowledge? A short cut may lead to truth as well as to error, especially since, in the beaten track, the truth has not been found. Why should it be assumed that the knowledge of the nature of an existing power is beyond the capacity of the human mind? Can it be the intention of Deity that man should be left in ignorance of this power, when we know that his whole life and existence is depending upon the operation of it? I presume to think not.

I endeavoured to draw your attention to certain facts, and endeavoured also to apply them to the views of M. Dumas as connected with the "four great topics," and to the production of the seed and the egg. Allow me briefly to recapitulate:—The atoms composing all material substances are of two distinct classes; these atoms are endowed with an attracting and repelling power, which attracting and repelling power is exhibited only under certain conditions of the atoms; the atoms of each class have separate and distinct properties as well as properties in common; all chemical and "electric" action is caused by the intermingling of those two classes of atoms in their motions of attraction and repulsion; and these atoms are susceptible of being distinguished by the terms mineral and vegetable, or male and female. I pointed to the fact that an excess of mineral matter in aqueous solution will, in certain conditions, under the influence of atomic magnetism, produce mineral formations; and that an excess of vegetable or animal matter in aqueous solution will, through the operation of the same law, or by the same magnetic process, produce animal formations; and that where the two classes are more equally united, vegetable productions will be the result of atomic magnetism. In any given case the productions are found to be as to the nature, position, and conditions of the atomic material from which they are formed. In all aqueous solutions, matter is inorganic; it becomes organised through atomic magnetism. Therefore, we may see that inorganic and organic matter is the same material in different conditions. The power is the same in both, but differently applied. The principle regulating this power is simply that like attracts and repels its like—that is, the atoms of a similar class attract and repel their like, as the case may be, the greater influencing the less. In the atmosphere, where atomic emanations are found in abundance, from the dissolving and reforming of bodies on the earth, atomic interaction is exceedingly rapid, because of greater freedom of the individual atoms in this position to attract and repel. All atmospheric phenomena can be shown to be caused by the various compounds, positions, and reciprocal action of the atomic particles. From this point of observation, or in my view of these facts, "the four great topics" resolve themselves into simply to—matter and its force. The force in atoms is magnetic, and by it, under Deity, all things were made and are made. I would respectfully ask, if my communication was not a fair attempt to accomplish what I had proposed, viz., to answer the question raised in my paper on M. Dumas' lecture, as to what is the nature and *modus operandi* of the primary force of matter.

It would give me much pleasure to have you, or any of your readers, subject my statements to a close analysis and the test of practical experiment.

THO. ROD. FRASER, M.D.

Halifax, Nova Scotia, Feb. 1870.



[The following list has been compiled expressly for the CHEMIST AND DRUGGIST, by L. de Foutainemoreau, Patent Agent, 4, South-street, Finsbury, London; 10, Rue de la Fidélité, Paris; and 3, Rue des Minimes, Brussels.]

Provisional Protection for six months has been granted for the following:—

3647. A. R. Stocker, of Horsleydown. Improvements in stoppers for infants' feeding and other bottles, and in the manufacture, construction, combination, and employment of the whole or part of the articles to be used. Dated 17th December, 1869.
1009. R. Jones, of Botolph-clare. Improvements in the preservation of animal and vegetable substances to be used as food. Dated 6th April, 1870.
1017. W. T. Henley, and D. Spill, jun., both of North Woolwich, Essex. Improvements in the manufacture of non-explosive compounds, forming the material for the manufacture of collodion and other substances, and in apparatus therefor. Dated 6th April, 1870.
1055. L. Weber, of Brussels. Improvements in galvanic cells and batteries. Dated 9th April, 1870.
1111. I. Baggs, of High Holborn. Improvements in making white lead. Dated 16th April, 1870.
1122. J. Barrow, of West Gorton, Lancaster. Improvements in the treatment of naphthalene and of hydrocarbon bodies containing naphthalene. Dated 18th April, 1870.
1124. J. Townsend, of Glasgow. Improvements in applying heat, and in apparatus for applying heat in various chemical and other operations, such as roasting, oxidising, calcining, decomposing, and volatilising. Dated 18th April, 1870.
1127. T. McIsaac, of Putney. An improved folding bed table for the use of invalids and others. Dated 18th April, 1870.
1142. H. W. Hammond, of Manchester. Improvements in the manufacture of superphosphate of lime. Dated 19th April, 1870.
1172. C. Bardy and L. Dusart, of Paris. An improved mode of preparing certain organic bases for producing colouring matters. Dated 22nd April, 1870.
1176. W. Gosage, of Widnes, Lancaster. Improvements in the decomposition of certain metallic sulphides, and in the production of alkaline compounds; also of a compound of sulphur by such decomposition. Dated 22nd April, 1870.
1186. P. Spence, of Manchester. Improvements in the production of prussiate of potash, prussiate of soda, and prussian blue. Dated 23rd April, 1870.
1218. J. Underwood, of Highgate. Improvements in means of stopping or closing the necks, mouths, or openings of bottles, jars, and other similar vessels. Dated 27th April, 1870.
1300. E. T. Kirkpatrick, of Brussels. A new or improved mode of producing oxygen gas at the ordinary temperature of the air, or at a higher temperature. Dated 6th May, 1870.
1312. L. Mond, of Farnworth-within-Widnes, and J. Hargreaves, of Appleton-within-Widnes, Lancaster. Improvements in the manufacture of chlorine. Dated 7th May, 1870.
1315. E. Guenin, of Henrietta-street, Covent-garden. Improvements in the manufacture of mustard and other plasters, and in machinery for the same. Dated 7th May, 1870.
1331. W. Hunt, of Castleford, near Normanton, York. A new or improved detergent compound to be used in the manufacture of soap, and for cleansing wool and woollen goods, and for other like purposes. Dated 10th May, 1870.
1350. F. Perry, of Fenchurch-street, and J. G. Bengough, of Hackney. Improvements in the preservation of meats. Dated 11th May, 1870.

Letters patent have been issued for the following:—

3204. C. Crookford, of Holywell, Flint. Improved modes of treating metallic ores and materials, and obtaining metallic and chemical products therefrom, and for utilising some of the waste products from smelting works, chemical works, tin-plate works, galvanising works, and paper mills, and for improvements in furnaces and apparatus in carrying out the same. Dated 6th November, 1869.
3319. K. Ogden, of Manchester. An improved deodorising compound to be employed in chambers or receptacles containing dead bodies, or bodies affected with a contagious disease. Dated 18th November, 1869.
3324. C. Faure, of Westminster. Improvements in galvanic batteries. Dated 18th November, 1869.
3355. T. F. Lynch, of Aldersgate-street. Improvements in bottles for holding poisons and other preparations. Dated 20th November, 1869.
3378. H. A. Bonnaville of Paris. Improvements in electric batteries. Dated 23rd November, 1869.
3406. B. Goddard and W. Finley both of Stockport, Chester. Improved machinery for pill-mass mixing and pill making, mixing plastic substances, making plaster rolls, and for other similar or analogous purposes. Dated 25th November, 1869.
3417. D. Barker, of Northfleet, Kent. Improvements in the manufacture of varnish and varnish paints. Dated 26th November, 1869.
3522. T. Prideaux, of Sheffield. Improvements in purifying and calcining gas and soap limes, and other chemical refuse of lime, which has been used in the manufacture of such articles. Dated 6th December, 1869.
3556. H. Byk, of Leipzig, Saxony. Improvements in refining and bleaching paraffin. Dated 9th December, 1869.

Specifications published during the month. Postage 1d. each extra.

2490. Distilling alcoholic liquors. 4d.
 2655. Electric batteries. 8d.
 2667. Preserving meat, etc. 1s. 2d.
 2679. Treating fatty and oily matters. 1s.
 2706. Extracting oil and making cake. 8d.
 2744. Removing and utilising phosphates. 4d.
 2746. Purifying spirits, etc. 10d.
 2768. Preparing and applying bisulphites for bleaching, etc. 10d.
 2771. Disinfectants. 4d.
 2782. Stopping bottles. 4d.
 2803. Distilling oils from minerals. 4d.
 2818. Green colouring matter. 4d.
 2819. Mono-hydrated carbonate of soda. 4d.
 2859. Balance for ascertaining the specific gravity of liquids, etc. d.
 2881. Expressing oil and making cake. 4d.
 2884. Apparatus for filling bottles and jars. 4d.
 2906. Refrigerators. 10d.
 2930. Distilling alcoholic liquors. 10d.
 2950. Treating mineral oils. 4d.
 2981. Desiccating animal and vegetable matters. 10d.

Varia.

BINOXIDE OF HYDROGEN AS A COSMETIC.

This new cosmetic has been lately introduced into the perfumery and druggist shops of France, representing a clear, colourless, and limpid fluid of slightly acid reaction. It is used for bleaching dark hair, giving it a much esteemed auburn tint, and is perfectly harmless. The binoxide of hydrogen was discovered about fifty years ago by Thénard, who already then recognised its powerful bleaching properties, based upon the active condition of one equivalent of oxygen. Its formula—viz.: H_2O —shows it to be oxidised water, and it has been used for a number of years to bleach feathers, for which a great demand exists in Europe, not only on the part of ladies, but also among officers, for court dresses. Thénard recommended it for the removal of freckles. It is prepared from binoxide of barium, this being decomposed by weak hydrochloric acid; the resulting chloride of barium, which is dissolved in the binoxide of hydrogen solution, is precipitated by careful addition of dilute sulphuric acid until a fresh precipitate ceases to form, when it is filtered and ready for use—*New York Druggists' Circular*.

CHINESE THERAPEUTICS.

The Chinese divide medicinal substances into heating, cooling, refreshing, and temperate. Their *Materia Medica* is contained in the work called the *Pen-tao-scang-mou*, in 52 large volumes, with an atlas of plates. Most of our medicines are known to them and prescribed, also mineral waters, with which the country abounds. They also have animal magnetisers, called *Cong-fou*. They divide their prescriptions into seven categories, viz.:—1st, the Great Prescription; 2nd, the Little Prescription; 3rd, the Slow Prescription; 4th, Prompt, or Through-by-daylight Prescription; 5th, the Odd Prescription, for fools, madmen, hypochondriacs, and the hysterical; 6th, the Even Prescription, for the wise and good; 7th, the Double Prescription, for those in the family way. Each of these recipes is applied to particular cases, and the ingredients that compose them are weighed out with the most scrupulous accuracy. The physician never pays a second visit unless sent for, and sometimes his services are no longer needed.—*Scientific American*.

EMBEZZLEMENT.

At the Salford Town Hall, on the 23rd ult., James Oseroff was charged before Sir J. I. Mantell, and Mr. J. F. Mart, with embezzling several sums of money the property of his master, Mr. Ellis Whittaker, chemist and druggist, Regent-road, Salford. The prisoner was summarily committed for four months.

MISS MORGAN, M.D.

Miss Frances Elizabeth Morgan, M.D., who lately took her degree at Zurich, and now holds an appointment as under-assistant in the General Hospital of Vienna, is mentioned as having been present, on the 30th ult., at the distribution of prizes in the great hall of the University. This is the first instance of the admission of a woman to the annual meetings of the Academy of Vienna. The *Neue Freie Presse*, in reporting this incident, describes Miss Morgan as an American lady. We are informed that she is an Englishwoman.



IN a letter which appeared a few days ago in the *Daily Telegraph*, signed by Mr. Edmund Tattersall, on a subject which does not in the least concern us, the writer, more wittily than logically, attacks those whose arguments threaten the future of his establishment. Gambling at the West-end, he informs us, is a mere bagatelle compared with the amount of gambling carried on in the City, only in the latter case they call it *business*, and in the former instance, *betting*. The wise men, says Mr. Tattersall, have always come from the East, and in this choice of names, each signifying the same thing, he sees another proof of this fact. This is a genuine specimen of the *tu quoque* style of argument; but the fact still remains, for good or for evil, and it is no new discovery, that business in its legitimate developments has not kept pace with the growing thirst of its votaries for riches, and so all around it there gathers the whirlpool of speculation which, as we have seen more than once, is the unfailing precursor of our periodical panics. We do not speak of this as an unmixed evil; it is better to wear out than to rust; it is only as a feature of the commercial enterprise of the day that we mention it. A man of genius might find among the unwritten stories of the Exchanges, many a thrilling tale of adventure and perseverance, and it seems almost a pity that some of our newspapers do not adopt a less rigid style of dressing up their Trade Reports. If, for instance, they were to employ writers for this department, who would otherwise spend their talents on the well-worn dreams of fiction, what a brilliant panorama might not our daily newspaper present to us! It is but seldom that the romantic stories of the Stock Exchange are revealed to us. Now and then we get a glimpse of its inner life, and sometimes, as in the recent pitched battle between the bulls and the bears in New York, a whole history is revealed to us. It is not there alone, however, that this untamable spirit of speculation is to be met with. In all departments of commerce, the same temptations arise, and the same results occur in a greater or a less degree. Tallow, for instance, is a very favourite article for the enterprising gentlemen whose varying manoeuvres fix its market value. These speculators, who never actually possess an ounce beyond their domestic stocks, buy and sell tons, risking their money on the chance of its price at settling day. So it is with many other kinds of goods; and it is the report of these transactions which goes to make up the City articles of our daily contemporaries. We have no hope of reforming the City, but seeing that things are so, we have made these remarks in the hope of arousing some competent, but now dormant, pens to become their chroniclers.

The political events of the month, as far as these affect commerce, offer but few points for our comments. From the American telegrams reporting the Congress debates on the new tariff, it seems tolerably clear that the free-trade party in the United States is growing in strength. There is but little prospect of any large immediate reduction in the restrictive import duties, but we may rest assured that arguments which are unanswerable in England will, with an unexpected suddenness at last, strike the minds of the quick-witted Americans, and then we may consider that protection will have received its death-blow. Mr. Lowe's scheme of saving the drawback when duties are remitted deserved a little better treatment than it received. It is

satisfactory to think that the nation has no wish to press heavily on a single class for the general advantage, but it would certainly be well if the precedent (for that is the chief argument by which the system of allowing drawbacks was maintained in the case of the sugar duties) could be abolished. As a matter of strict equity, the consumer might as well claim an allowance as the importer.

The reports from the chemical manufacturers continue very satisfactory; export orders seem to be abundant, and prices are firm, and in a few cases higher. Soda is dearer, and certain mercurials are quoted at advanced rates. In the last fortnightly drug sales a moderate quantity of goods was offered, but there was not much activity in the demand and few alterations in prices. Balsam of Capivi was in request and rather dearer. Rhubarb did not quite maintain previous rates. Castor Oil was firm. Citronelle steady. Gamboge was in less demand and was all bought in. Large supplies of Gums Olibanum and Arabic sold on lower terms. Camphor is in limited demand. Cardamoms: Malabar and Alepee are held by one house, and sales are now making at 10s.; nothing has been at auction since our last. Cubebs are quite neglected. Musk: fine Tonquin is in demand and finds ready buyers. Nux Vomica sells readily at rather better rates. Senna: Tinnevely is arriving freely, and the auctions have offered 738 bales, the bulk of which sold, very ordinary to good middling from 3d. to 6½d.; fine is scarce, and would command relatively higher rates. Rhubarb: anything good or fine sells readily, but the low qualities which are plentiful only sell at low rates. Galangal Root: none offered; it would sell at about 18s. to 22s. per cwt. Colombo Root: good fresh root sells, but other kinds are dull. Of Gums, the large arrivals of Assafœtida recently in, sold at fair prices. Arabic has been arriving freely and large sales advertised. Benjamin is lower, particularly the common and middling kinds of Sumatra, which are plentiful and dragging on the market. Myrrh sells readily; fine is very scarce and wanted. Shellac is dull and only selling in limited quantities at some decline on previous rates. There is no change in Dyewoods, except a slight reduction in Jamaica Logwood. Holders having shown some disposition to accept lower terms for Jamaica, large sales, amounting to nearly 2,000 tons have been effected on the spot, chiefly at about £4 to £4 2s. 6d., and 50 tons Morant Bay at £5 4s.

OILS.

Linseed, after having been firm at £32 to £32 5s. on the spot here, has, with more inclination on the part of crushers to sell, become easier, and offers now at £31 15s., and it is difficult of sale for the last four months at £33. The supply of English brown rape for present delivery has been limited, and the market has been steady at £43 10s. to £44 on the spot. Olive Oils have continued neglected. The recent advance in the price of Ceylon Coconut has checked the demand, but business has been done privately at £38 cash and at £38 10s. with full prompt.

PETROLEUM.—The market has exhibited no animation, and the price on the spot has receded, there being sellers at 1s. 7d.; July-August shipment offers at 1s. 7d., and September-December deliveries are steady at 1s. 7½d. Our stock is 22,076 barrels and 10,122 cases against 13,066 barrels and 19,080 cases same time last year; the deliveries last week were 483 barrels against 839 barrels same period last year. No change in Coal Oil or Naphtha, both of which are in very limited demand.

THE publisher of the CHEMIST AND DRUGGIST has in stock some handsome reading cases to hold six numbers of this publication. These will be found very convenient by those who care to keep their papers in order. Price 2s. 6d. each, sent for enclosure to any London wholesale house, or 2s. 6d. post free.—[ADVT.]

Monthly Price Current.

[The prices quoted in the following list are those actually obtained in Mining lanes for articles sold in bulk. Our Retail Subscribers must not expect to purchase at these market prices, but they may draw from them useful conclusions respecting the prices at which articles are offered by the Wholesale Firms.]

CHEMICALS.	1870.		1869.	
	January.		January.	
ACIDS—	s. d.	s. d.	s. d.	s. d.
Acetic per lb.	0 4 to	0 0	0 4 to	0 0
Citric per lb.	2 5½ ..	2 6	2 7 ..	2 7½
Hydrochlor. per cwt.	4 0 ..	7 0	4 0 ..	7 0
Nitric per lb.	0 5 ..	0 5½	0 5 ..	0 5½
Oxalic "	0 3 ..	0 0	0 8 ..	0 0
Sulphuric "	0 0½ ..	0 1	0 0½ ..	0 1
Tartaric crystal ..	1 3½ ..	0 0	1 2½ ..	1 2½
powdered ..	1 3½ ..	0 0	1 3 ..	0 0
ANTIMONY ore..... per ton	340 0 ..	400 0	280 0 ..	300 0
crudo per cwt.	40 0 ..	0 0	25 0 ..	26 0
regulus ..	80 0 ..	0 0	48 0 ..	50 0
star	80 0 ..	0 0	50 0 ..	50 0
ARSENIC, lump..... "	16 0 ..	16 6	16 0 ..	16 6
powder..... "	7 3 ..	7 6	7 3 ..	7 6
BRIMSTONE, rough .. per ton	160 0 ..	0 0	165 0 ..	0 0
roll per cwt.	11 0 ..	0 0	11 0 ..	11 10
flour..... "	12 0 ..	13 0	13 0 ..	13 10
IODINE, dry per oz.	0 9 ..	0 9½	0 9½ ..	0 10
IVORY BLACK, dry... per cwt.	0 0 ..	0 0	0 0 ..	0 0
MAGNESIA, calcined... per lb.	1 2 ..	0 0	1 6 ..	1 8
MERCURY..... per bottle	137 0 ..	133 0	137 6 ..	0 0
MINIUM, red per cwt.	20 6 ..	21 0	20 9 ..	21 0
orange "	31 6 ..	32 6	31 6 ..	32 6
PRECIPITATE, red... per lb.	2 9 ..	0 0	2 6 ..	0 0
white ..	2 8 ..	0 0	2 5 ..	0 0
PRUSSIAN BLUE ..	0 0 ..	0 0	1 0 ..	1 10
SALTS—				
Alum per ton	145 0 ..	150 0	145 0 ..	150 0
powder "	165 0 ..	170 0	165 0 ..	170 0
Ammonia:				
Carbonate per lb.	0 5½ ..	0 6	0 5½ ..	0 6
Hydrochlorate, crude,				
white..... per ton	480 0 ..	560 0	540 0 ..	0 0
British (see Sal Ammoniac)				
Sulphate per ton	320 0 ..	325 0	330 0 ..	335 0
Argol, Capo per cwt.	50 0 ..	67 6	65 0 ..	85 0
France ..	40 0 ..	50 0	45 0 ..	60 0
Oporto, red ..	22 0 ..	24 0	22 0 ..	25 0
Sicily ..	32 0 ..	40 0	45 0 ..	50 0
Naples, white ..	0 0 ..	0 0	55 0 ..	65 0
Florence, white ..	0 0 ..	0 0	70 0 ..	75 0
" red ..	0 0 ..	0 0	60 0 ..	65 0
Bologna, white ..	0 0 ..	0 0	0 0 ..	0 0
Ashes (see Potash and Soda)				
Bleaching powd... per cwt.	9 6 ..	0 0	10 3 ..	10 6
Borax, crude	25 0 ..	40 0	25 0 ..	35 0
(Tincal) ..	55 0 ..	65 0	30 0 ..	52 0
British refnd. ..	68 0 ..	70 0	66 0 ..	67 0
Calomel per lb.	2 5 ..	0 0	2 5 ..	0 0
Copper:				
Sulphate per cwt.	23 6 ..	24 0	23 6 ..	24 0
Copperas, green .. per ton	50 0 ..	60 0	52 6 ..	60 0
Corrosive Sublimate... p. lb.	1 11 ..	0 0	1 11 ..	0 0
Cr. Tartar, French, p. cwt.	83 0 ..	84 0	89 6 ..	90 0
Venetian grey ..	83 0 ..	0 0	0 0 ..	0 0
brown ..	0 0 ..	0 0	62 6 ..	72 6
Epsom Salts per cwt.	6 0 ..	7 0	8 0 ..	8 6
Glauber Salts "	4 6 ..	6 0	4 6 ..	6 0
Lime:				
Acetate, white, per cwt.	12 6 ..	23 0	12 6 ..	25 0
Magnesia: Carbonate ..	42 6 ..	0 0	42 6 ..	0 0
Potash:				
Bichromate per lb.	0 5½ ..	0 0	0 5 ..	0 5½
Carbonate:				
Potashes, Canada, 1st				
sort per cwt.	31 9 ..	32 0	32 0 ..	0 0
Pearlashes, Canada, 1st				
sort per cwt.	32 9 ..	33 0	32 0 ..	0 0
Chlorate per lb.	0 9½ ..	0 10	1 0 ..	0 0
Prussiate per lb.	1 0 ..	0 0	0 11½ ..	1 0
red ..	1 9½ ..	1 10	1 9½ ..	1 10
Tartrate (see Argol and Cream of Tartar)				
Potassium:				
Chloride per cwt.	9 6 ..	0 0	7 10 ..	8 0
Iodide..... per lb.	12 0 ..	0 0	12 0 ..	0 0
Quinine:				
Sulphate, British, in				
bottles per oz.	5 10 ..	6 0	5 9 ..	0 0
Sulphate, French ..	5 6 ..	0 0	5 2 ..	0 0
Sal Acetos per lb.	0 10 ..	0 0	0 10½ ..	0 0
Sal Ammoniac, Brit. cwt.	41 0 ..	42 0	36 0 ..	38 0
Saltpetro:				
Bengal, 6 per cent. or				
under per cwt.	24 0 ..	25 6	20 9 ..	22 6
Bengal, over 6 per cent.				
per cwt.	22 6 ..	23 6	20 0 ..	20 6
Madras..... "	21 6 ..	22 0	0 0 ..	0 0
Bomb & Kurracheop. et.	0 0 ..	0 0	0 0 ..	0 0
European..... "	25 0 ..	26 0	22 0 ..	22 6
British, refined ..	27 0 ..	27 6	26 0 ..	25 6
Soda: Bicarbonate, p. cwt.	10 0 ..	0 0	10 0 ..	0 0
Carbonate:				
Soda Ash.... per dog.	0 1½ ..	0 2	0 1½ ..	0 2
Soda Crystals per ton	77 6 ..	80 0	80 0 ..	0 0

DRUGS.	1870.		1869.	
	s. d.	s. d.	s. d.	s. d.
Soda:				
Hyposulphite... per cwt.	18 6 to	0 0	18 0 to	0 0
Nitrate	16 6 ..	17 6	15 6 ..	15 9
SUGAR OF LEAD, White, cwt.	39 0 ..	40 0	41 0 ..	42 0
Brown	26 0 ..	28 0	29 0 ..	30 0
SULPHUR (see Brimstone)				
VERDIGRIS per lb.	1 0 ..	1 2	1 0 ..	1 2
VERMILION, English... per lb.	2 7 ..	2 9	2 6 ..	3 0
China..... "	3 0 ..	3 1	2 7 ..	0 0
ALOES, Hepatic... per cwt.	60 0 ..	160 0	80 0 ..	180 0
Scottrine ..	100 0 ..	220 0	120 0 ..	300 0
Cape, good.. "	26 0 ..	23 6	28 0 ..	32 0
Inferior ..	17 0 ..	25 0	16 0 ..	27 0
Barbadoes ..	80 0 ..	220 0	80 0 ..	190 0
AMBERGRIS, grey..... oz.	25 0 ..	28 0	27 6 ..	32 6
BALSAMS—				
Canada per lb.	0 10½ ..	1 0	1 3 ..	0 0
Capivi	1 9 ..	1 11	1 9 ..	0 0
Peru	7 8 ..	7 10	11 0 ..	11 6
Tolu	2 3 ..	2 6	2 3 ..	0 0
BARKS—				
Canella alba per cwt.	20 0 ..	34 0	30 0 ..	45 0
Cascarilla..... "	22 0 ..	34 0	26 0 ..	36 0
Peru, crown & grey per lb.	0 10 ..	2 4	0 10 ..	1 11
Calisaya, flat ..	3 5 ..	3 8	3 2 ..	3 7
quill ..	3 4 ..	3 7	3 2 ..	3 6
Carthagea ..	1 0 ..	1 9	0 9 ..	1 6
Pitayo	0 10 ..	1 6	0 6 ..	1 5
Red	1 6 ..	7 0	2 0 ..	9 0
Bucho Leaves	0 3 ..	0 6	0 4 ..	0 7
CAMPOR, China.. per cwt.	82 6 ..	85 9	100 0 ..	0 0
Japan	85 0 ..	87 6	110 0 ..	0 0
Refin Eng. per lb.	1 3½ ..	0 0	1 8 ..	0 0
CANTHARIDES	3 6 ..	0 0	2 8 ..	2 9
CHAMOMILE FLOWERS p. cwt.	40 0 ..	72 6	60 0 ..	100 0
CASTOREUM per lb.	4 0 ..	32 0	4 0 ..	32 0
DRAGON'S BLOOD, lump ..	90 0 ..	200 0	100 0 ..	160 0
FRUITS AND SEEDS (see also Seeds and Spices.)				
Anise, China Star pr cwt.	120 0 ..	130 0	110 0 ..	0 0
German, &c. ..	25 0 ..	40 0	26 0 ..	38 0
Beans, Tonquin .. per lb.	1 0 ..	1 6	1 1 ..	1 6
Cardamoms, Malabar				
good ..	10 0 ..	11 0	7 6 ..	7 10
inferior ..	7 6 ..	9 6	5 6 ..	7 0
Madras ..	5 0 ..	10 0	4 6 ..	7 10
Ceylon ..	3 6 ..	3 10	2 6 ..	3 3
Corozo Nuts.... per cwt.	12 0 ..	15 0	16 0 ..	19 0
Cassia Fistula..	16 0 ..	35 0	20 0 ..	30 0
Castor Seeds ..	10 0 ..	12 0	11 0 ..	13 0
Cocculus Indicus ..	19 0 ..	20 0	26 0 ..	28 0
Colocyath, apple.. per lb.	0 4 ..	0 8	0 5 ..	0 9
Croton Seeds .. per cwt.	50 0 ..	61 0	62 0 ..	65 0
Cubebs	27 6 ..	32 6	35 0 ..	40 0
Cummin.....	100 0 ..	110 0	38 0 ..	43 0
Dividivi	12 0 ..	14 0	10 6 ..	12 6
Fenugreek.....	13 0 ..	15 0	9 0 ..	14 0
Guinea Grains ..	29 6 ..	32 0	33 0 ..	39 0
Juniper Berries ..	7 6 ..	8 6	7 0 ..	8 0
Myrobalans	8 6 ..	16 6	9 6 ..	16 6
Nux Vomica....	11 0 ..	15 0	10 0 ..	15 0
Tamarinds, East India ..	10 0 ..	16 0	12 0 ..	26 0
West India, new ..	10 6 ..	20 0	14 0 ..	24 0
Vanilla, large per lb.	24 0 ..	32 0	27 0 ..	30 0
inferior ..	12 0 ..	22 0	13 0 ..	26 0
Wormseed .. per cwt.	35 0 ..	0 0	25 0 ..	30 0
GINSENG, Preserved, in bond				
(duty 1d. per lb.) per lb.	0 6 ..	0 8	0 6 ..	0 10
GUMS (see separate list)				
HONEY, Narbonne ..	30 0 ..	47 0	30 0 ..	35 0
Cuba	22 0 ..	36 0	21 0 ..	36 0
Jamaica.....	31 0 ..	55 0	25 0 ..	45 0
IPECAOUANHA ..	6 6 ..	6 3	5 10 ..	6 3
ISINGLASS, Brazil..	3 0 ..	4 6	2 0 ..	4 6
Tongue sort ..	3 2 ..	4 9	3 3 ..	5 1
East India ..	1 8 ..	3 11	2 3 ..	4 0
West India ..	4 0 ..	4 3	3 8 ..	4 0
Russ. long staple	5 0 ..	8 0	5 0 ..	8 0
" leaf ..	3 0 ..	5 0	0 0 ..	0 0
" Simovia ..	1 6 ..	2 6	1 6 ..	2 6
JALAP, good	2 8 ..	3 4	3 2 ..	4 0
infer. & stems ..	0 6 ..	2 7	0 6 ..	3 0
LEMON JUICE ... per degree	0 1 ..	0 1½	0 1 ..	0 1½
LIQVORICE, Spanish per cwt.	0 0 ..	0 0	63 0 ..	68 0
Italian ..	40 0 ..	60 0	43 0 ..	67 0
MANNA, flaky per lb.	3 0 ..	3 6	3 0 ..	8 6
small..... "	1 6 ..	1 9	1 3 ..	1 9
MUSK..... per oz.	18 0 ..	35 0	19 0 ..	35 0
OILS (see also separate List)				
Almond, expressed per lb.	1 0 ..	0 0	1 3 ..	0 0
Castor, 1st pale	0 4½ ..	0 0	0 5½ ..	0 6
second ..	0 4½ ..	0 0	0 5½ ..	0 0
infer. & dark ..	0 4½ ..	0 0	0 4½ ..	0 5
Bombay (in casks)	0 4 ..	0 4½	0 4½ ..	0 0
Cod Liver per gall.	5 0 ..	6 6	5 0 ..	7 6
Croton..... per oz.	0 3½ ..	0 4½	0 3 ..	0 4
Essential Oils:				
Almond	42 0 ..	0 0	40 0 ..	0 0
Anise-seed per lb.	8 7 ..	0 0	9 3 ..	9 6
Bay	65 0 ..	70 0	65 0 ..	70 0
Bergamot per lb.	8 0 ..	15 0	9 0 ..	17 0
Cajuput, (in bond) per oz.	0 2½ ..	0 3	0 1½ ..	0 2
Caraway per lb.	5 6 ..	6 3	5 3 ..	5 9
Cassia	4 7 ..	0 0	5 0 ..	0 0
Cinnamon per oz.	1 0 ..	4 6	1 0 ..	4 6

